PRIVATE
DEPOSITORY

MONTHLY NOTICES

OF THE

ROYAL ASTRONOMICAL SOCIETY.

VOL. LIII. NO. 2. DECEMBER 1892.

Fellows of the Society are informed that post-cards containing the titles of papers to be read at the evening meetings will be sent to those who shall express their wish to receive them. Fellows desiring to receive the post-cards are requested to send their names to the Assistant-Secretary, Mr. W. H. Wesley, Burlington House, London, W.

In order to enable the Secretaries to prepare complete lists in time for the issue of the post-cards, authors are particularly requested to send in their papers not later than the Tuesday preceding the day of meeting.

Fellows are informed that Vol. L. of the *Memoirs* is now published, and may be had on application at the apartments of the Society; or will be sent post free on receipt of a written request to that effect, addressed to the Assistant-Secretary.

The price of Vol. L. to the public is 12*s*. 6*d*.

MONTHLY NOTICES

OF THE

ROYAL ASTRONOMICAL SOCIETY.

VOL. LIII. DECEMBER 9, 1892. No. 2

E. B. KNOBEL, President, in the Chair.

John A. Brashear, Allegheny, Pennsylvania, U.S.A.;
Walter William Bryant, Seymour Cottage, Conduit Vale, Blackheath, S.E.;
Captain James Fisher, Kentmere, Birdhurst Rise, South Croydon;
Thomas Charlton Hudson, 3 Montpelier Row, Blackheath, S.E.;
Francis R. Wardle, 43 Moorgate Street, E.C.,

were balloted for and duly elected Fellows of the Society.

The following candidates were proposed for election as Fellows of the Society, the names of the proposers from personal knowledge being appended:—

Harold John Adams, M.A., Civil Servant, St. John's, Cedar Road, Beckenham (proposed by John M. Stone);
Samuel Barker, Barrister-at-law, 9 Hanover Terrace, Regent's Park, N.W. (proposed by Arthur Kennedy);
P. Doyle, F.R.S.E., M.R.I.A., Editor of *Indian Engineering*, 19 Lall Bazar, Calcutta (proposed by Asutosh Mukhopadhyay);
The Rev. Edwin G. Gange, Baptist Minister, Osborne House, Cotham Park, Bristol (proposed by W. F. Denning);
John Spencer, F.G.S., Rock House, Crawshaw Booth, near Manchester (proposed by William Garnett);
Anthony Stanbridge Thomson, Lieut. R.N.R., F.R.G.S., F.R.M.S., A.I.E.E., Telegraph Works, Silvertown, Essex (proposed by Charles Bright).

Seventy-one presents were announced as having been received since the last meeting, including, amongst others, Zeichnungen und Studien des Mondes, von Dr. L. Weinek, presented by the Prague Observatory; Second Glasgow Catalogue of 2,156 stars for the epoch 1890 . . . by Professor Robert Grant, presented by the Glasgow Observatory; The Visible Universe, by J. E. Gore, presented by the publishers; J. Mabillon, Iter Germanicum, Hamburgi 1717, presented by the President.

Note on Nova Aurigæ. By W. H. M. Christie, Astronomer Royal.

The *Nova* appears to have again brightened recently after having become invisible during October in the 10-inch guiding telescope of the Astrophotographic Equatorial, and several photographs have been taken of it lately, comparisons with the companion star about 2′ n.f. having been also made by eye with the 10-inch refractor. In this telescope it was noted as invisible about October 7 by Mr. Turner (who saw the companion star distinctly), on October 22 by Mr. Davidson, and on October 25 by Miss Everett. Mr. Davidson again looked for it on November 29, and was surprised to find it decidedly brighter visually than the companion star, and on November 30 Mr. Turner and Mr. Davidson both estimated it as about one magnitude *brighter* than the companion. As this star was estimated by Professor Krueger, in his Revisionzone, 1858 March 23, to be of 9·5 mag., the visual magnitude of the *Nova* as estimated by Mr. Turner and Mr. Davidson on November 30 would be about 8·5 mag.

From photographs taken by Mr. Davidson on November 29 and 30, and by Miss Russell on December 5, with exposures ranging from 16^m to 15^s, the *Nova* appears to be photographically about 0·9 mag. *fainter* than the companion star, the photographic magnitude of the *Nova* referred to the four companion stars (8·2 to 8·7 mag.) being 11·6, while that of the companion is 10·7 mag.

Thus while the *Nova* is now visually about 1 mag. *brighter* than the companion star, it is photographically nearly 1 mag. *fainter*; and it is to be noted that the companion star is photographically about 1 mag. fainter than Professor Krueger's visual estimate, so that it would seem that the *Nova* is now about three magnitudes fainter photographically than visually.

Royal Observatory, Greenwich:
1892 *December* 8.

On the Spectrum of the New Star in Auriga, as compared with the spectra of planetary nebulæ. By Eugen von Gothard.

In the new star, which appeared in February, a catastrophe took place before our eyes, which is perhaps destined to afford us a glimpse into the origin and the disappearance of celestial bodies. My spectrographic studies seem to show me the direction in which to look for the origin and the dissolution of stars.

In February I examined the spectrum of the new star several times directly by the eye, and six times by means of photography.

The spectrum consisted of many bright and several dark lines, the latter mostly corresponding with the former. My photographs show 40–43 bright lines and 12–13 dark ones.

It appeared to me, therefore, as if it consisted of two bodies, of which the one produced the emission, the other the absorption spectrum, and which had rushed against each other with enormous rapidity in the line of sight.

I will refrain on this occasion from entering into a minute description of the beautiful spectrum. The following remarks treat merely of its present aspect.

The new star rapidly decreased in brilliancy. After the middle of March I could not observe it with my modest $10\frac{1}{2}$-inch reflector. In the autumn, when it was again in a favourable position for observation, I observed it with a beautiful 10-inch objective prism, which my friend Dr. Nicholas von Konkoly had placed at my disposal for my spectrographic studies. The valuable prism had been ground by a very skilful amateur, Herr Fabriksdirector Dr. Max Pauly in Mühlberg.

The spectrum appeared amongst the numerous spectra of the neighbouring stars like a star of the 10th mag. It was therefore monochromatic.

I obtained a photograph of it on September 15. As I did not find it on the plate I took another on the 19th. This time six spots could be distinguished.

In the meantime I had photographed with the prism several interesting but seldom accessible objects, so that a comparison with the nebulæ G.C. No. 4447, 4964, and with the Wolf-Rayet stars in *Cygnus*, became possible. My surprise was very great to find that the spectrum of the *Nova* bore a great resemblance to the two first-mentioned nebulæ. Since then I have taken the photographs of several planetary nebulæ, not only with the objective prism, but also with my quartz iceland spar spectrograph, so that I could determine the wave-lengths of the spots. Each new photograph increased the probability, which may be considered as a proved fact, that *the spectrum not only resembles, but that the aspect and the position of the lines show it to be identical with the spectra of the planetary nebulæ.* In other words, the new star has changed into a planetary nebula.

The following table will demonstrate my assertion in the most striking manner:—

	Wave-lengths.						
	I.	II.	III.	IV.	V.	VI.	VII.
G.C. No. 4447	502	...	434	411	396·5	386	373 μμ
G.C. No. 4964	501	470	434	409	397	386·5	...
G.C. No. 4373	502	...	434	410	396·5	386·5	373
G.C. No. 4514	502	...	434	410	396·5	386·7	371
G.C. No. 4628	501	468	434	408·5	396	386·5	372
N.G.C. No. 7027	500·7	464	434	410	395	385·5	...
N.G.C. No. 6891	502	...	434	410	396	386	372
N.G.C. No. 6884	500·5	...	434	...	395	386·5	...
New star	580(?) 500	465	434	408	395	385·5	372

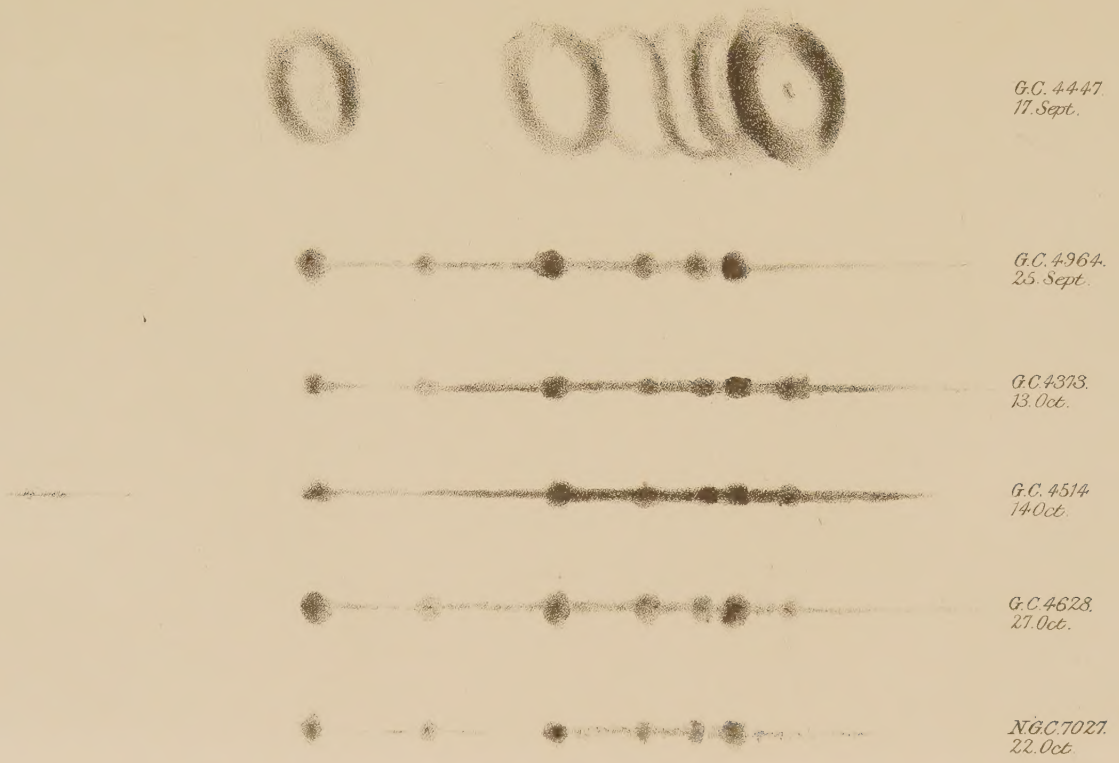
The correspondence of the wave-lengths is so close that one could not expect it to be closer, considering the uncertainty of the measurement of the diffused spots, and the shortness of the entire spectrum, the whole lengths, from λ500 to λ372, being only 2·4 mm.

The resemblance between the spectra becomes most apparent and convincing when the plates are superposed and both spectra examined together side by side. Nobody could possibly distinguish one from the other.

Before entering into the details of the spectra I will note the estimated intensities:—

	I.	II.	III.	IV.	V.	VI.	VII.
G.C. No. 4447	8	...	5	2	6	7	10
G.C. No. 4964	8	2	9	6	6	10	...
G.C. No. 4373	5	...	10	7	7	9	4
G.C. No. 4514	3	...	10	7	6	9	5
G.C. No. 4628	9	1	6	4	5	10	1
N.G.C. No. 7027	10	1	6	1	2	8	...
N.G.C. No. 6891	6	...	8	5	4	10	1
N.G.C. No. 6884	9	...	5	...	1	10	...
New star	8	4	10	5	4	7	1

I must now communicate the results I arrived at with the quartz spectrograph, by means of which the identification of the lines and the computation of their wave-lengths became possible. No direct estimation is practicable with the objective-prism, since it is impossible to take with it simultaneously the photographs of the spectrum and of the comparison spectrum. But it would be quite as impossible to take with the spectroscope most of the above-mentioned nebulæ, on account of the great feebleness of their lights.


G.C. 4447
17. Sept.
G.C. 4964.
25. Sept.
G.C 4373.
13. Oct.
G.C. 4514
14 Oct.
G.C 4628.
27. Oct.
N.G.C. 7027.
22. Oct.

Digitized by the Internet Archive
in 2026

https://archive.org/details/monthly-notices-of-the-royal-astronomical-society_1892-12-09_53_2

Great Nebula of Orion.

I.	1	II.	2	III.	IV.	V.
...	486·1	...	...	434·0	410·1	396·9
3	VI.		4	5	6	VII.
388·6	386·7		383·3	379·6	376·7	372·7

G.C. No. 4964.

I.	1	II.	2	III.	IV.	V.
500·8	...	469·0	436·0	434·0	410·1	396·9
3	VI.		4	5	6	VII.
388·9	386·8		...	379·7	...	...

G.C. No. 4628.

I.	1	II.	2	III.	IV.	V
500·9	...	...	...	434·0	410·1	396·6
3	VI.		4	5	6	VII.
388·7	386·7		...	...	...	...

Hydrogen.

I.	1	II.	2	III.	IV.	V.
...	486·1	...	...	434·01	410·10	396·89
3	VI.		4	5	6	VII.
388·78	...		383·45	379·69	376·94	...

In the photograph of the *Orion* nebula, I. is missing, as an ordinary plate was used, and not, as for all the others, an orthochromatic one.

From these results the following final conclusions may be drawn :—

1. The spectra of the planetary nebulæ are very like each other ; they only differ somewhat in the relative intensities of the lines, which, however, do not alter their typical character.

2. The lines of hydrogen play so important a part that they are represented in all the spectra by several lines.

3. Besides the hydrogen lines, two characteristic nebular lines, $\lambda = 500{\cdot}8$ and $386{\cdot}7\mu\mu$, are found in all the nebulæ which I have so far examined ; the third line, $\lambda = 372{\cdot}4$, occurs frequently, but another line, $\lambda = 464$–$470\mu\mu$, appears but seldom.

4. The new star must, at present, be in a state which chemically and physically resembles that of the planetary nebulæ.

5. In the spectra of all planetary nebulæ there exists a more or less distinct continuous spectrum, which seems to form the nucleus of the nebula. The spectrum gives the impression that this nucleus is surrounded by an extensive gaseous atmosphere.

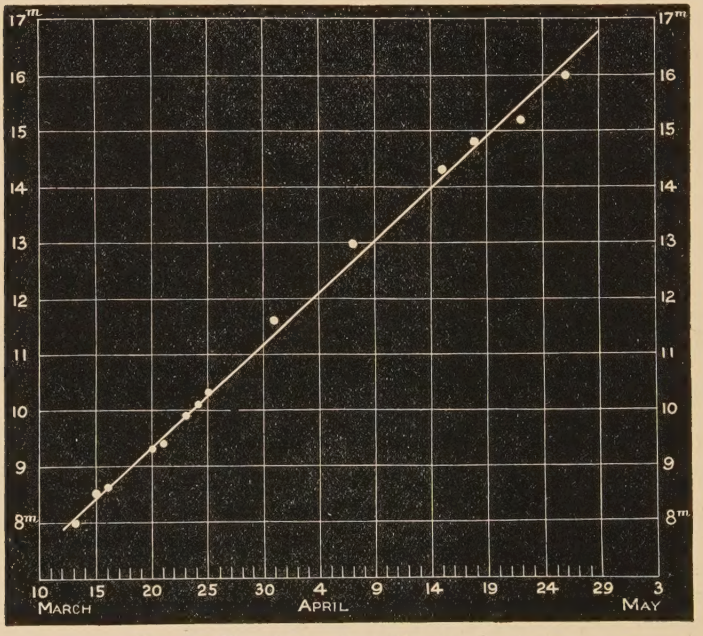
I will not draw any further conclusions at present, but will continue my studies, and shall especially endeavour, by means of long exposures, to obtain with greater certainty such details as are not sufficiently distinct as yet.

I shall pursue the history of the new star further by photographing its spectrum from time to time, and hope that I may take the liberty of giving another account of my results.

Herény Astrophysical Observatory,
1892 *November* 4.

The New Star in Auriga. By S. W. Burnham, M.A.

My observations of Anderson's new star in *Auriga*, which connected it by micrometrical measures with all of the stars within a radius of about 2′, have been given in *Monthly Notices* for April 1892. These measures were principally made while the new star was as bright as the sixth magnitude. After it had fallen to the eighth magnitude, I com menced a series of observations with a view of ascertaining its magnitude, and the ratio of



Observed Magnitudes of the New Star in *Auriga*.

diminution, during the time of its change, or so long as it might be visible with the large refractor of the Lick Observatory. I observed it on every available occasion until it was so low in the west in the early part of the evening that further comparisons would have little or no value.

For the lower magnitudes I have used for comparison the same stars which had been measured previously, and have adopted the magnitudes there given in determining that of the new star, with the single exception of the nearest companion, B. When the measures were made, the new star was a naked-eye object, and this faint companion at a distance of only 33″ was seen with considerable difficulty. The mean of the several estimates gave 14·8 for the magnitude of B. A careful examination of this star when the *Nova* had retrograded so that its light

could no longer affect the apparent brightness of the other, led me to think that this assigned magnitude was too small by about half a magnitude, and that it should be called 14·3. In the comparisons this value is used. I saw no reasons for changing the magnitudes previously given of the other companions.

In the following table I give the dates of the observations, the comparison stars used, the letters referring to the stars previously measured, and the deduced magnitude of the new star.

Observed Magnitudes of the New Star in Auriga.

Mar. 13	D. M. (30°) 942	8·0
15	„ „ 913, 924, 942	8·5
16	„ „ 913	8·6
20	„ „ 913, 924	9·3
21	„ „ 924	9·4
23	F	9·9
24	E, F, L, N	10·1
25	L	10·3
31	E, G, F	11·6
Apr. 7	E, G, I, J, B, K	13·0
15	B	14·3
18	B, C, *e*	14·8
22	B, C	15·3
26	B, C	16·0

The date last mentioned is the last time the new star was looked for. It was at that time very faint, and seen with considerable difficulty, but the conditions were not favourable. If the light continued to diminish as it had done throughout the observations, it was evident that, if it could be seen at all on any subsequent night, the estimates under the circumstances would have no value.

These observations are laid down on the accompanying diagram. It will be seen that the change in brightness from the eighth to the sixteenth magnitudes was perfectly uniform throughout. The divergences shown on the diagram are much within the ordinary errors of observation, and it is therefore safe to assume that the decline in brightness between these limits was without any sensible variation. This being true, there was every reason for supposing that the new star would go down steadily until it reached a point below the limit of the large telescope, and it is probable that this decline actually took place; but it could hardly have been anticipated that the star would again increase in brightness, and become a comparatively bright object in the course of a few months. It is unfortunate that it could not have been followed with the 36-inch until the

minimum brightness was reached, or until it was certainly beyond the reach of that instrument. In the scale of magnitudes employed here, that limit would have been reached in about a week from the date of the last observation. As the observations show that no change occurred in the rate of decrease while the star passed from the eighth to the sixteenth magnitude, and as it is probable that this movement would not be suddenly arrested, it is fair to presume that the new star became much fainter than the seventeenth magnitude, and passed far beyond the reach of any telescope.

It is also to be regretted that it was not examined earlier when it was again observable in the east. At this time, in the latter part of August, it seems to have reached about $10\frac{1}{2}$ magnitude. This was followed by the important discovery by Professor E. E. Barnard, on the night of August 20, that it was no longer a star, but was a small bright nebula with a nucleus of about the tenth magnitude. The nebulous character of the object was seen at once by this experienced observer, with the ordinary micrometer eyepieces of the large equatoreal. The spectroscopic observations at Mount Hamilton and elsewhere have since shown a corresponding change in the spectrum.

I have been able to examine this star once since its reappearance. On the morning of September 6 it was observed by Professor George E. Hale and myself with the 12-inch of the Kenwood Observatory. At this time it was a little brighter than F, the comparison giving for the magnitude of the new star 10·2.

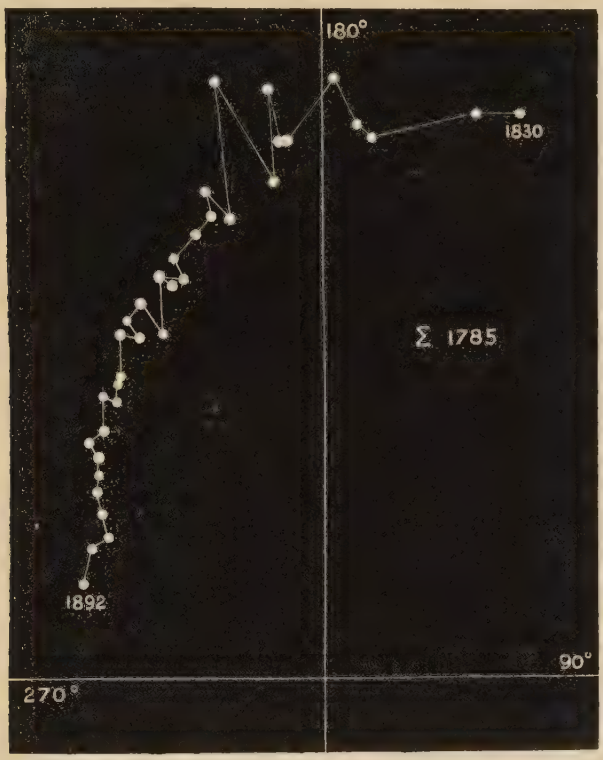
Chicago:
October 17.

The Binary Star Σ 1785. By S. W. Burnham, M.A.

This binary has now passed over 84° of position-angle since the measures of Struve in 1830; and the data are now sufficient for an approximate determination of the elements of the orbit. During this time the distance has been steadily diminishing. It was discovered by South, who measured it in 1823 on a single night. His distance is nearly 2″ too large, as will appear from a comparison with the later measures of Struve and others. It is evident that the period is a very long one, and that the angular change for some time to come will be comparatively rapid. It is therefore desirable that this pair should be measured every year or two for the present.

To facilitate the computation of the orbit, I have made a careful collection, from the original sources, of all the measures, and give them below in chronological order. The last observa-

tions cited were made recently with the 36-inch refractor of the Lick Observatory.



Measures of Σ 1785.

1823·40	160°·4	5″·66	South	1*n*
1830·12	164·4	3·49	Struve	3*n*
1830·20	164·5	4·62	Herschel	1*n*
1831 ±	163·8	3 ±	Herschel	1*n*
1831·34	166·3	(7·69)	Herschel	2*n*
1843·48	174·6	3·39	Mädler	3*n*
1846·40	176·2	3·19	Philpott	4*n*
1850·44	178·0	...	Mädler	1*n*
1851·28	178·7	3·48	Mädler	2*n*
1855·32	183·6	3·11	Mädler	2*n*

1856·31	183°1	2″97	Mädler	1*n*
1856 36	186·0	3·24	Secchi	2*n*
1858·38	185·1	3·12	Dembowski	5*n*
1859·32	185·4	2·89	Morton	2*n*
1861·57	190·0	3·51	Mädler	2*n*
1863·31	192·0	2·73	Radcliffe	2*n*
1863·68	191·1	2 66	Dembowski	11*n*
1864·47	193·5	2·88	Engelmann	2*n*
1865·42	193·8	2·87	Engelmann	7*n*
1865·82	193·3	2·59	Dembowski	11*n*
1867·40	196·1	2·81	O. Struve	2*n*
1867·83	195·8	2·52	Dembowski	8*n*
1870 19	198·6	2·54	Dunér	5*n*
1870·33	199·4	2·79	O. Struve	2*n*
1870·35	200·5	2·54	Gledhill	4*n*
1870·81	199·4	2·43	Dembowski	8*n*
1871·35	199·1	2·43	Radcliffe	2*n*
1871·38	199·2	2·51	Knott	3*n*
1871·43	199·9	2·38	Pierce	2*n*
1872·43	201·7	2·67	Dunér	2*n*
1872·89	201·9	2·32	Dembowski	8*n*
1873·42	200·2	2·41	Lindstedt	2*n*
1873·57	202·2	2·45	Wilson and Seabroke	4*n*
1874·79	205·2	2·18	Dembowski	7*n*
1875·24	206·4	2·47	Dunér	3*n*
1875·32	205·3	2·34	Schiaparelli	5*n*
1876·00	207·6	2·37	Wilson and Seabroke	4*n*
1876·41	208·6	2·56	Plummer	2*n*
1876·45	206·9	2·15	Schiaparelli	4*n*
1876·85	208·5	2·14	Dembowski	8*n*
1877·32	208 4	2·21	Doberck	6*n*
1877·38	208·6	2·25	Schiaparelli	6*n*
1878·34	210·5	2·14	Dembowski	3*n*
1878·39	210·7	2·55	Seabroke	2*n*
1879·42	214 5	2·04	Hall	3*n*
1879·46	212·5	2 20	Schiaparelli	5*n*
1879·50	214·0	2·07	Seabroke	3*n*
1880 35	215·9	1·92	Hall	2*n*
1880·37	213·8	2·13	Bigourdan	1*n*
1880·46	215·4	2·27	Jedrzejewicz	3*n*

1880·46	215°·2	2″·03	Seabroke	3*n*
1881·33	216·9	1·98	Bigourdan	1*n*
1881·36	217·9	2·11	Schiaparelli	4*n*
1881·40	215·7	1·96	Hough	1*n*
1881·40	217·8	1·92	Hall	2*n*
1882·42	219·9	1·93	Hall	3*n*
1882·44	220·0	2·13	Schiaparelli	7*n*
1882·45	221·3	2·22	Seabroke	3*n*
1882·46	221·9	2·22	Rugby	3*n*
1882·93	221·2	2·06	Engelmann	7*n*
1883·42	221·6	1·90	Hall	2*n*
1883·46	221·8	1·91	Schiaparelli	6*n*
1884·39	224·8	1·86	Hall	3*n*
1884·46	224·9	1·98	Schiaparelli	4*n*
1884·63	226·6	1·78	Rugby	2*n*
1885·35	223·8	1·86	Perrotin	3*n*
1885·36	226·8	1·78	Hall	3*n*
1885·43	227·9	1·72	Rugby	2*n*
1885·44	227·1	1·83	Schiaparelli	10*n*
1886·38	228·7	1·68	Perrotin	2*n*
1886·41	231·4	1·46	Rugby	2*n*
1886·41	228·0	1·83	Hall	3*n*
1887·37	232·7	1·62	Hall	3*n*
1887·45	231·8	1·67	Schiaparelli	11*n*
1887·45	232·8	1·08	Rugby	1*n*
1887·59	228·0	1·80	Tarrant	2*n*
1888·33	236·5	1·12	Rugby	3*n*
1888·37	233·9	1·61	Hall	3*n*
1889·28	235·3	1·60	Rugby	3*n*
1889·45	237·1	1·51	Hall	3*n*
1890·43	240·7	1·54	Hall	3*n*
1890·47	240·5	1·57	Hayn	1*n*
1892·37	248·6	1·46	Burnham	3*n*

The character of the relative motion will be best seen from the accompanying diagram showing the observed positions for each year in which measures were made. The observations of South in 1823, and those of Herschel in 1830–31, are omitted, as they are obviously erroneous in distance. The diagram strikingly illustrates, even with these omissions, the superior accuracy and consistency of the later measures, although the

components were much closer, and more difficult to observe. Where the years are represented by the measures of more than one observer, the mean is taken for the position shown on the diagram.

The interest of this pair is further increased by the proper motion of the system. This is given by Stumpe from Argelander as $0''.481$ in the direction of $262°.95$.

The place of this star (1880) is:

R.A. $13^h\ 43^m\ 38^s$
Decl. $+\ 27°\ 35'$

Chicago: November 20.

The Lunar Eclipse, 1892 *May* 11–12. By G. J. Newbegin.

The night of May 11–12 turned out so exceptionally fine and clear that (though in $-16°$ of declination) the Moon soon became a steady object in the telescope.

With regard to the eclipse, I decided to take a series of photos at about half-hour intervals, and so endeavour to secure a permanent record of its several stages.

The exposures were made at 9 20, 9.50, 10 30, 11, 11.30 P.M., 12 midnight, and 12.30 A.M.

The periods of exposure were varied to allow for the decreasing illumination of the Moon, and were respectively 20^s, 20^s, 30^s, 40^s, 30^s, 20^s, 20^s.

The plates were the Ilford Ordinary, developed by hydroquinone.

The instrument by which they were taken is a 9-inch Cooke Equatoreal, aperture reduced to two inches for the whole series.

The intervals between the exposures were occupied in developing the plates.

1892 *November* 11.

Note on an Occultation of DM.$+4°.123$ (*Mag.* 6·5) *by Mars on* 1893 *January* 14. By A. M. W. Downing, M.A.

Amongst the cases of possible occultations of stars by planets, given by Herr Berberich in *Ast. Nach.*, No. 3131, is one of the occultation of a 6·5 mag. star by *Mars* on January 14 next. The star will be occulted to observers situated at the Cape and at Durban; and the particulars of the occultation are given below for these observatories, as well as those of the near approach of the planet to the star as seen from Greenwich.

The star's place is taken from the Albany Zone Catalogue (where it is No. 204), the planet's from the *Nautical Almanac*, from which source are also taken the horizontal parallax and semi-diameter. The latter, as adopted in the *Nautical Almanac*, is undoubtedly too large—probably 0″·6 too large at the distance with which we are here concerned—so that the durations given below are probably too great in a corresponding proportion.

Cape Observatory. Middle of occultation January 14, $6^h\ 52^m{\cdot}9$ Cape mean time. Duration, $4^m{\cdot}9$. Position-angle at immersion, 50°. Position-angle at emersion, 260°. Unfortunately, the Sun does not set at the Cape on this day until $7^h\ 10^m$ Cape mean time.

Natal Observatory. Middle of occultation January 14, $7^h\ 43^m{\cdot}7$ Durban mean time. Duration, $4^m{\cdot}9$. Position-angle at immersion, 52°. Position-angle at emersion, 258°. At Durban the Sun sets on this day at $7^h\ 0^m$ Durban mean time.

Greenwich Observatory. Time of nearest approach, January 14, $5^h\ 40^m{\cdot}2$ Greenwich mean time. Distance of star from centre of planet at this time, 9″·8. Position-angle, 335°.

1892 *December* 9.

Photographs of Comet Holmes. By Isaac Roberts, D.Sc., F.R.S.

Two photographs of Comet Holmes have been taken with the 20-inch reflector. The first, on November 18 (last month) between sidereal time $0^h\ 30^m$ and $1^h\ 45^m$, with exposure of 75 minutes; and the second, on the 20th, with an exposure of 30 minutes. The one now presented is an enlargement from the first negative to the scale of 1 millimetre to 30 seconds of arc, the position of the comet then being, approximately, in R.A. $0^h\ 43^m$, Decl. N. 37° 24′.

The photograph shows the comet to be nearly circular in outline, with the n.p. semicircle well defined, but the s.f. side is undefined and shades into invisibility. The diameter of the defined part measures about 12 minutes of arc, and the comet has a well-defined stellar nucleus when viewed with a low magnifying power, but with a magnifying power of 77 diameters on the negative the nucleus is semi-transparent, and shades without a definite boundary into the comet.

From the nucleus projects a dense condensation, resembling a tail, about 6 minutes of arc in length and 80 seconds in breadth, extending in the n.p. to s.f. direction. The tail is straight, not sharply defined at the margins, and shades into invisibility. It ends with the undefined side, and forms a radius to the circle of the comet.

The nucleus measures about 23 seconds of arc in diameter, and 54 secs. preceding it is the star D.M. No. 140 Zone, 37°, R.A. $0^h\ 40^m\ 27^s$, Decl. 37° 11′·3, magnitude 9·5, epoch 1855.

The stellar nucleus of the comet, and the tail-like projection from it, are also well shown on the second photograph, with an exposure of 30 minutes.

Elements of Comet Holmes (*f* 1892). By Edward Roberts, F.S.S.

The following elements of the comet discovered by Mr. Holmes on November 6 have been calculated from the observations of November 9 and November 26, taken at the Royal Observatory, Greenwich, kindly communicated by the Astronomer Royal, and the position measured from a supposed photograph of the comet taken by Mr. Schooling, of Hammersmith, on October 18, between 8^h and $9^h\ 30^m$. The measurements of the photographic plate were made by Miss A. Russell.

Greenwich Mean Time.	Apparent R.A.	Apparent Decl.
d h m s	h m s	° ′ ″
Oct. 18 8 45	1 2 10·7	+39 55 54
Nov. 9 10 29 40	0 45 52·45	38 18 35·7
26 9 7 56	0 42 9·8	+36 32 37

Epoch. 1892 Nov. 9·5 Greenwich Mean Time.

ϵ	341 49 6·3	
π	328 15 12·3	Mean Equinox of 1892·0
ν	328 17 6 0	
i	22 32 33·2	
ϕ	40 19 8·1	

log a 0·7875307
n 233″·7279
T 1892 April 14·5645
Period 15·1809 years.

The three positions are exactly reproduced.

3 *Verulam Buildings, Gray's Inn, W.C.:*
1892 *December* 9.

Observations of Holmes' Comet (f 1892) made at the Royal Observatory, Greenwich.

(*Communicated by the Astronomer Royal.*)

The observations were made with the East, or Sheepshanks Equatoreal, aperture 6·7 inches, by taking transits over two cross wires at right angles to each other, and each inclined 45° to the parallel of declination (also occasionally over a third wire bisecting the angle between the other two). Magnifying power, 55.

The observations are corrected for refraction, but not for parallax.

Greenwich Mean Solar Time.				Observer.	✱−★ R.A.	Log factor of Parallax.	Corr. for Refraction.	✱−N.P.D.	Log factor of Parallax.	Corr. for Refraction.	No. of Comps.	Apparent R.A.	Apparent N.P.D.	Comp. ★
1892	d	h m	s		m s		s	′ ″		″		h m s	c ′ ″	
Nov.	12	8 27	17	A. C.	+0 19·35	8·9679	0·00	+ 8 40 5	0·3237	+0·2	4	0 44 28·55	51 59 14·3	*a*
	12	8 29	52	„	−2 27·20	8·9544	0·00	− 2 59·1	0·3218	−0·1	2	0 44 32·26	51 58 51·3	*b*
	12	8 29	49	C. D.	−2 29·28	8·9593	0·00	− 3 18·3	0·3211	−0·1	2	0 44 30·18	51 58 32·1	*b*
	12	8 35	58	„	+0 19·21	8·8593	0·00	+ 8 17·1	0·3193	+0·2	4	0 44 28·41	51 58 50·9	*a*
	14	6 21	19	B.	−3 13·92	9·4887	0·00	+ 7 22·6	0·4631	0·0	2	0 43 45·53	52 9 12·8	*b*
	14	6 37	45	„	+0 0·21	9·4497	+0·01	−12 23·0	0·4390	0·0	3	0 43 41·41	52 10 13·7	*c*
	14	6 43	58	C. D.	−3 12·54	9·4316	0·00	+ 8 32·3	0·4307	+0·1	2	0 43 46·91	52 10 22·6	*b*
	14	7 3	14	„	+0 2·81	9·3669	0·00	−12 0·5	0·4055	0·0	6	0 43 44·00	52 10 36·2	*c*
	14	8 2	6	„	−0 21·17	9·1089	0·00	+20 8·7	0·3405	+0·1	1	0 43 48·01	52 10 42·1	*a*
	14	8 2	6	„	−0 25·67	9·1089	0·00	+18 19·8	0·3405	0·0	1	0 43 48·14	52 10 38·8	*d*
	14	7 27	0	L.	+0 1·02	9·2904	0·00	−11 54·3	0·3749	0·0	2	0 43 42·21	52 10 42·4	*c*

Greenwich Mean Solar Time.	Observer.	☄ − ★ R.A.	Log factor of Parallax.	Corr. for Refraction.	☄ − ★ N.P.D.	Log factor of Parallax.	Corr. for Refraction.	No. of Comps.	Apparent R.A.	Apparent N.P.D.	Comp. ★
1892 d h m s		m s		s	′ ″		″		h m s	° ′ ″	
Nov. 14 7 58 12	L.	−0 23·00	9·1345	0·00	+20 5·7	0·3440	+0·1	1	0 43 46·18	52 10 39·1	*a*
17 8 50 30	A. C.	−0 49·54	7·7559	0·00	+ 7 1·0	0·3238	+0·1	5	0 42 51·62	52 29 37·4	*c*
18 6 5 48	C. D.	−2 41·41	9·4829	0·00	+ 3 9·5	0·4684	0·0	2	0 42 38 27	52 35 22·2	*e*
18 6 19 54	,,	−1 2·20	9·4455	0·00	+12 49·7	0·4496	+0·1	3	0 42 38 95	52 35 26·0	*c*
18 7 25 21	D. E.	−2 48·72	9·2167	0·00	+ 4 12·5	0·3697	0·0	4	0 42 30 96	52 36 25·2	*e*
18 10 8 2	L.	−1 9·43	9·1921	0·00	+13 45·3	0·3645	+0·1	2	0 42 31 72	52 36 21·6	*c*
20 6 20 17	A. C.	+0 28 97	9·4258	0·00	− 8 54·9	0·4417	−0·1	5	0 42 19 49	52 48 9·8	*f*
20 6 26 29	,,	+1 39·18	9·4094	0·00	− 0 59·6	0·4335	0·0	3	...	...	*g*
21 7 10 38	L.	+0 18 98	9·2274	0·00	− 1 54·9	0·3810	0·0	4	0 42 9·49	52 55 9·6	*f*
21 7 56 23	,,	−0 36·10	8·9088	0·00	+ 8 13·4	0·3464	+0·1	2	...	...	*h*
21 8 9 47	D. E.	+0 18·69	8·7328	0·00	− 0 18·1	0·3405	0·0	2	0 42 9·20	52 56 46·6	*f*
26 9 2 3	A. C.	+0 43·33	8·9476	0·00	+ 8 51·1	0·3637	−0·2	3	0 42 9·53	53 27 15·5	*i*
26 9 15 49	,,	+1 8·64	9·0669	0·00	− 5 55·7	0·3725	+0·2	2	0 42 9·83	53 27 28·5	*k*
26 9 16 47	,,	−0 45·20	9·0741	0·00	− 1 51·5	0·3730	+0·1	1	...	...	*l*

Note.

Throughout this period the comet was very ill-defined, with little, if any, trace of a nucleus.

The initials L., A. C., B., C D., D. E., are those of Mr. Lewis, Mr. Crommelin, Mr. Bryant, Mr. Davidson, and Mr. Edney respectively.

Comparison Stars.

	Star's Name.	R.A. 1892·0. h m s	N.P.D. 1892·0. ° ′ ″	Authority.
a	W. B. (2), 0, 1083	0 44 6·22	51 50 59·8	Weisse's Bessel.
b	Lalande, 1443	0 46 56·48	52 2 16·6	Paris Catalogue.
c	Lalande, 1323	0 43 38·25	52 23 3·1	,, ,,
d	W. B. (2), 0, 1087	0 44 10·85	51 52 45·5	Weisse's Bessel.
e	Lalande, 1384	0 45 16·76	52 32 39·6	Paris Catalogue.
f	W. B. (2), 0, 1029	0 41 47·65	52 57 31·6	Weisse's Bessel.
g	B. D. + 36°, 122	0 40 38·2	52 49·5	Bonn Observations.
h	B. D. + 37°, 141	0 42 40 7	52 47·2	,, ,,
i	W. B. (2), 0, 1021	0 41 23·39	53 18 52·2	Weisse's Bessel.
k	W. B. (2), 0, 1013	0 40 58·37	53 33 51·6	,, ,,
l	B. D. + 36°, 128	0 42 49·7	53 29·2	Bonn Observations.

Royal Observatory, Greenwich:
1892 *December* 6.

---

*Errata in "Monthly Notices," Vol. LII., No. 7, page 515, Comparison of ☄ Swift with * f.*

May 5 $13^h\ 43^m\ 42^s$ ☄ − * R.A., for $18^s{\cdot}13$ read $78^s{\cdot}13$

Apparent R.A. of ☄, insert $22^h\ 45^m\ 42^s{\cdot}49$.

Apparent N.P.D. of ☄, insert 66° 14′ 8″·8.

Page 516. Star *f* is not anonymous, but is W. B. (2), XXII., 994;

Mean R.A. 1892·0, $22^h\ 44^m\ 24^s{\cdot}87$, N.P.D. 66° 13′ 19″·6, Authority: Lalande and Weisse's Bessel.

Observations of Winnecke's Periodical Comet at Windsor, New South Wales. By John Tebbutt.

Winnecke's Comet was found with the help of Dr. von Haerdtl's ephemeris on June 12, but as it could be well seen from the northern hemisphere and was unfavourably placed here for observation, no observations were then attempted. The comet was picked up on July 17, after having passed conjunction with the Sun, and was observed on all possible occasions, when the weather and the Moon's absence permitted, till September 27. All the positions sent herewith were determined with a square bar-micrometer, the 4½-inch equatoreal being employed on July 17 and the 8-inch instrument on all the other dates. On looking for the comet on September 27 it could not be seen as a separate object, but a small star of the tenth magnitude was found fringed with a faint nebulous haze. As the position of this object agreed closely with that derived from an extension of Dr. Haerdtl's ephemeris in *Ast. Nach.*, No. 3083, I made four comparisons of it with comparison star No. 29. Clouds prevented further observations, so that the separation of the comet from the small star was not seen.

I trust the series of positions now sent will turn out as useful as those published for the last return in the forty-seventh volume of the *Monthly Notices*. I may add that a careful search was made here for Comet Tempel 1867 II. on June 19 between $17^h\ 30^m$ and $18^h\ 50^m$ of R.A. and 25° and 32° of south declination, but although the sky was brilliantly clear and the Moon absent, no trace of the comet could be found.

Private Observatory, The Peninsula, Windsor, N. S. Wales:
1892 *October* 27.

Observations of Winnecke's Comet.

1892.	Windsor Mean Time.	Comet − Star. Δ R.A.	Comet − Star. Δ N.P.D.	Comps.	Comet's App. R.A.	Log. $p\Delta$.	Comet's App. N.P.D.	Log. $p\Delta$.	Reduction to App. Place.		Star.
	h m s	m s	′ ″		h m s	−	° ′ ″	+	s	″	
July 17	17 48 57	+0 55·54	− 2 32·3	10	5 15 18·04	9·6095	94 56 36·9	0·6524	−0·11	−12·1	1
19	17 19 27	+1 58·15	+ 1 55·0	10	...	9·6200	...	0·6264	−0·02	−13·6	2
20	17 41 36	−0 37·89	+ 2 23·5	10	...	9·5739	...	0·5972	+0·01	−14·3	3
20	17 48 33	+2 42·36	+ 0 46·7	8	...	9·5619	...	0·5939	+0·02	−14·4	4
21	17 30 57	−3 17·05	+ 5 7·8	14	...	9·5760	...	0·5814	+0·04	−14·9	5
22	17 15 33	+2 53·70	− 0 36·2	12	4 39 34·06	9·5869	102 40 11·1	0·5698	+0·12	−15·9	6
23	17 48 41	+7 11·65	+ 1 51·9	5	4 33 38·50	9·5058	103 54 5·5	0·5257	+0·19	−16·7	7
24	17 26 26	−3 38·77	− 8 53·0	8	4 28 18·80	9·5366	104 59 35·5	0·5182	+0·17	−17·0	8
27	17 35 16	+0 6·79	− 7 31·2	11	4 14 2·36	9·4580	107 50 23·0	0·4409	+0·34	−18·9	9
28	16 31 47	−1 2·85	+ 0 44·9	10	...	9·5842	...	0·4816	+0·38	−19·3	10
	16 31 47	−4 55·63	− 9 28·5	10	...	9·5842	...	0·4816	+0·35	−19·3	11
29	16 15 24	+2 1·60	− 2 38·6	10	4 6 10·03	9·6003	109 22 4·6	0·4798	+0·44	−19·9	12
29	16 15 24	+0 58·57	+ 5 17·9	10	4 6 10·19	9·6003	109 22 6·5	0·4798	+0·44	−19·9	13
29	16 57 17	+0 57·45	−10 31·4	7	4 6 3·38	9·5190	109 23 21·3	0·4312	+0·44	−20·0	14
Aug. 2	16 9 18	+1 43·33	+ 2 35·1	9	3 52 22·87	9·5661	111 55 32·6	0·4038	+0·64	−21·7	15
2	16 9 18	+1 26·47	+ 1 7·6	9	3 52 23·05	9·5661	111 55 31·1	0·4038	+0·64	−21·7	16
3	15 54 24	+1 12·59	− 7 49·1	10	3 49 21·73	9·5826	112 27 48·8	0·4075	+0·68	−22·1	17

1892.	Windsor Mean Time.	Comet – Star. Δ R.A.	Comet – Star. Δ N.P.D.	Comps.	Comet's App. R.A.	Log. $p\Delta$.	Comet's App. N.P.D.	Log. $p\Delta$.	Reduction to App. Place.		Star.
	h m s	m s	′ ″		h m s	−	° ′ ″	+	s	″	
Aug. 15	13 50 8	−2 27·04	− 8 24·0	12	3 19 31·69	9·6704	117 12 59·9	0·4042	+1·24	−25·5	18
23	13 57 48	+7 9·54	+ 0 13·6	8	3 1 41·85	9·5899	119 19 57·8	0·2121	+1·72	−26·7	19
23	13 57 48	−5 48·80	− 4 18·9	8	3 1 41·78	9·5899	119 20 2·4	0·2121	+1·61	−26·8	20
25	13 34 22	−2 1·44	+ 6 23·0	10	2 57 12·09	9·6128	119 45 42·3	0·2297	+1·74	−26·9	21
26	13 44 17	−1 18·35	− 9 51·3	10	2 54 53·74	9·5823	119 57 52·2	0·1737	+1·80	−27·0	22
27	13 56 2	+3 54·57	− 6 30·5	10	2 52 35·15	9·5424	120 9 32·7	0·1080	+1·89	−27·0	23
27	13 56 2	+2 31·18	− 6 54·1	10	2 52 35·26	9·5424	120 9 32·5	0·1080	+1·88	−27·0	24
Sept. 16	10 0 45	+0 43·27	+ 9 52·2	10	...	9·7207	...	0·3964	+2·76	−25·4	25
16	10 0 45	−2 19·91	+ 0 59·7	10	...	9·7207	...	0·3964	+2·74	−25·5	26
17	10 36 5	−1 45·31	+ 8 43·6	10	...	9·6744	...	0·2751	+2·78	−25·3	25
17	10 36 5	−4 48·47	− 0 8·3	10	...	9·6744	...	0·2751	+2·76	−25·4	26
18	11 10 3	+2 7·38	− 1 44·2	5	...	9·6087	...	0·1327	+2·84	−24·9	27
18	11 10 3	−4 13·13	+ 6 54·6	5	...	9·6087	...	0·1327	+2·80	−25·2	25
18	11 10 3	−7 16·36	− 1 58·7	5	...	9·6087	...	0·1327	+2·78	−25·3	26
20	11 49 45	+2 34·29	+10 12·9	10	1 54 55·45	9·4790	121 46 26·2	9·9195	+2·91	−24·5	28
22	10 33 58	−1 58·05	+ 2 28·5	15	1 50 23·15	9·6279	121 38 42·1	0·1814	+2·95	−24·2	28
26	11 3 48	+2 15·77	− 0 0·2	10	1 41 20·79	9·5030	121 15 46·1	9·9897	+3·07	−23·0	29
27	11 34 5	+0 2·09	− 7 31·4	4	1 39 7·13	9·3766	121 8 15·0	9·8444	+3·09	−22·9	29

Mean Places of the Comparison Stars for 1892·0.

Star.	R.A. h m s	N.P.D. ° ′ ″	Authorities.
1	5 14 22·61	94 59 21·3	Lalande, 9981–2.
2	4 57 34	98 22	Equatoreal.
3	4 52 59	99 55	Equatoreal.
4	4 49 37	99 57	Equatoreal.
5	4 49 0	101 18	Equatoreal.
6	4 36 40·24	102 41 3·2	Lalande, 8880; Schjellerup, 1508–9; $Armagh_2$, 580.
7	4 26 26·66	103 52 30·3	Lalande, 8575; Schjellerup, 1449.
8	4 31 57·40	105 8 45 5	Lalande, 8745–6; Arg.–Oeltzen, 3220–1.
9	4 13 55·23	107 58 13·1	Lalande, 8119.
10	4 11 8	108 36	Equatoreal.
11	4 15 1	108 47	Equatoreal.
12	4 4 7·99	109 25 3·1	Arg.–Oeltzen, 2842; Cincinnati Zone, 579.
13	4 5 11·18	109 17 8·5	Lalande, 7815; Cincinnati Zone, 584; $Armagh_2$, 516.
14	4 5 5·49	109 34 12·7	Arg.–Oeltzen, 2861; Cincinnati Zone, 583.
15	3 50 38·90	111 53 19·2	Lalande, 7298; Cincinnati Zone, 542.
16	3 50 55·94	111 54 45·2	Lalande, 7311; Cincinnati Zone, 543.
17	3 48 8·46	112 36 0·0	Lalande, 7217; Arg.–Oeltzen, 2613.
18	3 21 57·49	117 21 49·4	Arg.–Oeltzen, 2279; Cordoba Zone, 46·103.
19	2 54 30·59	119 20 10·9	Arg.–Oeltzen, 1951; Brussels, 1165; Cordoba Zone, 73·116; Stone, 1233.
20	3 7 28·97	119 24 48·1	$Yarnall_3$, 1375; Brussels, 1228; Cordoba Zone, 73·136. Greenwich Cat., 1880·484; Stone, 1317
21	2 59 11·79	119 39 46·2	Arg.–Oeltzen, 2006; Cordoba Zone, 73·123.
22	2 56 10·29	120 8 10·5	Arg.–Oeltzen, 1970; Cordoba Zone, 73·120.
23	2 48 38·69	120 16 30·2	Arg.–Oeltzen, 1881; Cordoba Zone, 73·109.
24	2 50 2·20	120 16 53·6	Arg.–Oeltzen, 1899–1900; Cordoba Zone, 73·110.
25	2 4 0	121 45	Equatoreal.
26	2 7 4	121 54	Equatoreal.
27	1 57 40	121 55	Equatoreal.
28	1 52 18·25	121 36 37·8	Cordoba Zone, 107·43; Stone, 770.
29	1 39 1·95	121 16 9·3	Cordoba Zone, 107·20.

Galactic Longitudes and Latitudes of the brighter Stars in a Zone of the Heavens containing the Milky Way. By A. Marth.

In a paper communicated, twenty years ago, to the Royal Astronomical Society by Mr. Lassell, and published in vol. xxxiii. of the *Monthly Notices* (pp. 1–14 and 517–527), with a supplement published in vol. xxxiv. (pp. 77–82), I supplied the galactic co-ordinates of the leading stars within or near the Milky Way, so that they might serve as a correct groundwork for representations of the Galaxy, for which an appeal was made to competent draughtsmen. At that time the only accessible modern delineation of the Milky Way derived directly from the sky was that of the southern portion from Antinous to Monoceros, found on plate xiii. of Sir John Herschel's Results of Astronomical Observations made at the Cape of Good Hope. As explained in article (341) of the volume, Herschel had made his original drawings on a larger scale on blank paper on which he had pricked off the stars from Bode's charts. Adopting for his general map the projection, in which the galactic circle or the medial line of the entire Galaxy is extended into a straight line, he had then laid down " (from a good celestial globe, by Bardin, for 1800) the chief stars as a skeleton—inserting others from the maps by the aid of proportional compasses," and had worked over it an accurate resemblance of the forms and, as near as possible, of the intensities of the several parts of the Milky Way as represented in the original drawings. Whatever device may have been used in transferring the positions of the chief stars from the globe to the sheet of paper, the introduction of some sensible inaccuracies in fixing the positions in that way could not well be avoided, and it was with the view of sparing intending draughtsmen all such preliminary trouble, and of insuring the correct positions of the stars, that I prepared the former list of co-ordinates, in the hope that competent observers would take advantage of the means thus provided.

A few years later I was informed by Mr. Trouvelot, then at Cambridge, Mass., that he had adopted the data of the list as the foundation of a pastel drawing of the Galaxy, which was being exhibited at the Philadelphia Exhibition of 1876, and that it was under consideration how to get it published. As I had not heard since what had become of the publication, I wrote last May to Mr. Trouvelot, now at Meudon, to inquire, and he was good enough not only to give me the desired information, but also to send me, with some smaller photographs, a print (white on black) of the one-half of his drawing which has been published by Charles Scribner's Sons, of New York, in their series of astronomical drawings. This print is now in the library of the Royal Astronomical Society, to which, by leave and in the name

of Mr. Trouvelot, I have transferred it. An extract from his letter will best explain several peculiarities of the print:—

"The list of co-ordinates of stars which you published served as basis for the drawing. But in order to make a picture, the vacant spaces were filled in with stars borrowed from Dien's *Star Atlas*; but this latter task was made very rapidly, and without any pretensions to absolute accuracy.

"In the United States, where the sky is of extraordinary clearness, the Galaxy sometimes appears all flaky and sparkling with stars, which appear as minute clusters, and at times seem to blaze forth with 'star-dust.'

"The critique I will make concerning my drawing is that the dark channels dividing the luminous masses are a little too dark, and that it would more nearly represent the truth if these dark gaps were slightly illuminated, so that the contrast between the bright and the dark portions should become less marked."

Elaborate representations of the regions of the Galaxy south of 12°·5 of northern declination became accessible in 1877 by the publication of the Atlas of the *Uranometria Argentina*, one of the results of the great work accomplished by Dr. Gould and his assistants at Cordoba. "The position and ramification of the Milky Way were elaborately delineated by Mr. Thome, and minutely scrutinised by direct comparison with the heavens during the preparation of each map" (*Uranometria Argentina*, p. 9). The drawings "exhibit many details of outline and contrasts of brilliancy, which are not clearly perceptible except upon the clearest and darkest nights" (p. 344). "The mode of representation which has been adopted was required by the photographic process of transfer, which is inadequate to an equal and exact reproduction of shading or tints in the original, and made it necessary to employ in its preparation only black ink of uniform colour" (p. 345). These explanations refer to the detailed representations of the portions of the Milky Way given on ten of the maps, from which any desired information has to be gathered. For the comprehensive sketch on the index map merely fulfils its purpose to serve as an index sketch, and fails in resembling the real aspect of the Galaxy, since in the adopted isographic projection the distances between successive parallels of declination decrease in the ratio of $1 : \cos \frac{1}{2}\varpi$ (if ϖ denotes the polar distance), while the corresponding distances in right ascension increase in the ratio of $1 : \sec \frac{1}{2}\varpi$, the ratio of areas not being impaired.

In the stereographic projection of not less than 100 degrees radius, which Dr. Boeddicker has adopted for his elaborate Map of the Milky Way as seen in our northern latitudes, the great variation of scale is a most serious drawback. The scale increases indeed equally for both co-ordinates, but at the rate of $1 : \sec^2 \frac{1}{2}\varpi$ for arcs, and therefore of $1 : \sec^4 \frac{1}{2}\varpi$ for areas, so that at the polar distances—

0°	30°	40°	50°	60°	70°	80°	90°	100°

the ratios of equivalent arcs are

1	1·07	1·13	1·22	1·33	1·49	1·70	2·00	2·42

and of equivalent areas—

1	1·15	1·28	1·48	1·78	2·22	2·90	4·00	5 86

The necessity of making due allowance for this distortion in all studies of the drawing renders the correct interpretation of its many delicate features, and the proper comparison of the evidence, which is to be found in the details, needlessly troublesome and difficult. Fair justice does not seem to have been done to the high value of the original sectional drawings by their being unsuitably combined.

A comprehensive drawing, representing the whole girdle of the Galaxy, on a uniform scale and without appreciable distortion, and allowing direct comparison of all its parts, such as I had in view when I prepared my old paper, is not yet in existence. It is, however, not for the purpose of making another appeal to the comparatively few observers, who might give their help as competent draughtsmen in the production of such a drawing, that I have prepared the greatly enlarged galactic catalogue contained in the present paper. The chief reason why I have not grudged the time which its preparation has cost, is the consideration that the regular watching and controlling of the richest regions of the heavens for the timely discovery of the brighter variable, and especially temporary, stars may thereby be rendered comparatively easy to all observers who are willing to take part in the watching. But for the purpose it is important, and almost essential, that they should prepare their star-maps with their own hands. Let them select any special region in the zone of the Galaxy, and lay down the galactic places of the stars within the region on properly prepared paper (be it millimetre paper or paper covered with subdivisions of inches). The mere insertion of the places, and their being marked by suitable discs according to the various magnitudes, will already be of great help in procuring acquaintance with the selected region. The comparisons with the heavens may then be made in the usual way by letting light shine on the map. But in order to save the eyes from much of the usual strain occasioned thereby, let the map be darkened on the back, or mounted on dark paper, and let the star-places be pricked by means of pricking needles of suitable diameters, the needles being mounted on pieces of cork, so that they may be heated to make clean holes, if some better contrivance is not found. The comparisons with the heavens may then be made in the dark, by letting some concealed light be seen through the holes, and they will be found far more expeditious and satisfactory than when made in the usual way.

As regards the question of scale, the suggestion of an inch for five degrees, or a centimetre for two degrees, still seems to

me, for unaided vision, the most practical, except perhaps if paper is used on which the inch is subdivided into twenty parts in groups of five, when an inch for four degrees will be more convenient. As regards the star discs, proper experiments should be made to decide upon the most suitable size. If the discs are to be proportional to the amount of light, the diameter δ of a star of magnitude m should be such that $\log \delta = 0{\cdot}2\ (m_0 - m)$, if 1 is the diameter of a star of magnitude m_0. But the condition renders the discs of bright stars unnaturally large, so that some compromise will be preferable.

The following catalogue supplies the galactic longitudes and latitudes of all the stars down to the magnitude $6^{m}{\cdot}0$ of the *Harvard Photometry* (H. P.), or $6^{m}{\cdot}2$ of the *Uranometria Argentina* (U. A.), which are within twenty degrees of the central line of the Galaxy, for which I have retained the assumptions of my former paper, which differ little from Argelander's, and according to which the pole of the Galaxy is in right ascension $12^{h}\ 40^{m}$, and declination $+30°$ for 1880·0, so that the inclination of the central line to the equator is 60°, and the ascending node, from which the galactic longitudes are reckoned, in right ascension $18^{h}\ 40^{m}$.

The central line of the Galaxy, according to Gould's later determination, makes an angle of $2°{\cdot}70$ with the assumed one, but as I could not afford to repeat my old computations, it will be sufficient if I supply at the end of the catalogue the data for inserting on the map Gould's line, equator, ecliptic, &c.

Besides the stars mentioned, the catalogue contains a number of lesser stars, which have been inserted for various reasons, also a considerable number of stars outside the twenty degrees limits. The magnitudes stated are those of the Harvard Photometry and of the *Uranometria Argentina*, except in the case of variable stars, when the limits of variability, taken from the latest lists, are given. The sign *d* of duplicity is not added, if the comes is too faint to appreciably affect the magnitude. If a star is placed in different constellations, both constellations are mentioned. The last columns give the right ascension α and declination δ for 1880·0.

Galactic Long.	Lat.	Magn. H.P.	Magn. U.A.			Star.	α 1880. h	m	s	δ 1880. °	′
0·01	−20·91	5·9	6·1			Aquilæ	19	53	16	−10	16·3
0·98	−18·96	5·3	5·7 *d*	57		,,	19	48	8	− 8	32·3
1·53	+ 1·23	5·1	5·5	4		,,	18	38	47	+ 1	56·3
2·16	−13·58	5·6	5·8	42		,,	19	31	25	− 4	54·9
2·56	+ 3·85	5·5	5·8	60		Serpentis	18	23	26	− 2	3·7
2·57	+21·46	2·2	...	55	α	Ophiuchi	17	29	22	+12	38·9
2·86	+12·63	4·8	5·0	71		,,	18	1	34	+ 8	43·2
2·93	−11·13	5·2	5·6	56	*e*	Aquilæ	19	24	23	− 3	2·3
2·97	+ 9·35	5·7	5·8			Ophiuchi	18	13	21	+ 7	12·7
3·10	+ 6·92	5·7	6·0			,, Serp.	18	22	7	+ 6	7·3
3·31	+ 7·26	cum.		VIII 72		,, ,,	8m·6 18	21	45	+ 6	28·7
3·35	− 8·00	5·6	5·9	27	*d*	Aquilæ	19	14	24	− 1	6·8
3·47	− 1·24	5·7	6·0	64		Serpentis	18	51	15	+ 2	22·7
3·61	− 2·95	5·8	6·3			Aquilæ	18	57	28	+ 1	38·8
3·62	+13·01	3·8	3·6	72		Ophiuchi	18	1	40	+ 9	32·9
4·13	− 8·07	6·0	6·3			Aquilæ	19	16	11	− 0	28·7
4·44	+ 8·31	5·8	5·9			Ophiuchi, Serp.	18	19	52	+ 7	57·9
4·57	+ 5·26	5·3	5·8			,, ,,	18	30	49	+ 6	34·7
4·61	+ 2·78	5·7	5·9			Serpentis	18	39	34	+ 5	22·6
4·79	+ 0·19	4·7	4·5	63	θ	,,	18	50	15	+ 4	2·9
...	...	5·1	4·7				18	50	17	+ 4	2·8
4·83	− 6·58	5·4	5·7	23		Aquilæ	19	12	26	+ 0	52·1
5·03	−11·70	4·3	4·6	41	ι	,,	19	30	31	− 1	33·1
5·18	− 8·68	4·8	5·4	32	*v*	,,	19	20	23	+ 0	6·0
5·28	− 4·93	5·2	5·7	21		,,	19	7	40	+ 2	5·4
5·42	+20·25	6·1	...			Ophiuchi	17	38	50	+14	27·8
5·51	−16·20	5·7	5·9			Aquilæ	19	47	2	− 3	25·4
6·13	−12·24	5·5	5·9	45		,,	19	34	32	− 0	53·9
6·63	+21·42	5·7	...			Ophiuchi	17	36	36	+16	0·5
6·71	+ 6·48	5·5	5·7			,, Serp.	18	30	44	+ 9	1·7
6·80	+ 1·16	5·7	5·8	62		Serpentis	18	49	36	+ 6	28·0
6·90	− 8·42	5·7	6·1	35	*e*	Aquilæ	19	22	57	+ 1	42·4
7·48	− 7·07	3·5	3·4	30	δ	,,	19	19	27	+ 2	52·6
7·65	+10·87	5·9	6·1			Ophiuchi	18	17	0	+11	58·3
7·85	− 4·27	5·4	6·1	22		Aquilæ	19	10	35	+ 4	37·5
7·99	− 2·03	5·3	5·7	19		,,	19	3	7	+ 5	53·1
8·74	−14·82	5·6	5·9	58		,,	19	48	36	− 0	2·3
8·86	−14·09	var.	3·5−4·7	55	η	,,	19	46	22	+ 0	41·9

Galactic Long.	Lat.	Magn. H.P.	Magn. U.A.			Star.	α 1880. h	m	s	δ 1880. °	′	″
°	°	m	m									
8·90	+21·07	5·7	...			Herculis	17	41	50	+17	44	5
9·14	−17·39	5·9	6·1	62		Aquilæ	19	58	12	− 1	2	6
9·42	+17·88	4·5	5·3	93		Herculis	17	54	43	+16	45	5
9·55	− 0·39	var.	6·4−11		R	Aquilæ	19	0	35	+ 8	4	0
9·96	−18·93	3·4	3·0	65	θ	,,	20	5	7	− 1	10	6
10·05	−19·44	5·7	5·8	66		,,	20	7	2	− 1	22	1
10·59	−23·93	5·2	5·3	69		,,	20	23	23	− 3	17	0
11·21	− 8·86	5·0	5·7	44	σ	,,	19	33	16	+ 5	7	5
11·91	−25·26	5·3	5·1	70		,,	20	30	29	− 2	57	9
12·08	+ 0·88	5·1	5·6	18		,,	19	1	20	+10	53	2
12·27	− 6·75	4·7	5·3	38	μ	,,	19	28	14	+ 7	7	5
12·70	+14·63	6·1	...			Herculis	18	12	51	+18	5	2
12·81	+ 5·48	6·0	6·6			Aquilæ	18	46	32	+13	49	4
12·93	+13·49	5·5	...			Herculis	18	17	31	+17	46	0
13·04	+11·33	5·7	...			,,	18	25	44	+16	50	8
13·35	+ 3·82	5·2	5·8	11		Aquilæ	18	53	34	+13	27	8
13·48	+17·43	5·2	...	101		Herculis	18	3	42	+20	1	7
13·49	−24·85	4·4	4·5	71		Aquilæ	20	32	8	− 1	31	4
13·53	−20·79	6·1	6·4			,,	20	18	31	+ 0	40	9
13·55	−19·14	5·1	...	96		Herculis	17	57	15	+20	50	1
13·86	− 1·16	5·1	5·7	25	α	Aquilæ	19	12	11	+11	22	8
13·97	− 9·09	5·8	6·2	49	υ	,,	19	39	50	+ 7	19	4
14·19	+19·65	4·6	... *d*	95		Herculis	17	56	25	+21	35	8
14·20	+17·78	4·5	...	102		,,	18	3	38	+20	47	8
14·21	−11·75	4·0	3·9	60	β	Aquilæ	19	49	25	+ 6	6	5
14·31	+ 2·60	3·1	...	17	ζ	,,	18	59	54	+13	41	2
14·46	+21·20	5·8	...			Herculis	17	50	48	+22	29	0
14·65	+11·04	5·6	...			,,	18	29	56	+18	6	5
14·67	+ 4·40	4·1	...	13	ε	Aquilæ	18	54	11	+14	54	4
14·76	−11·35	5·4	5·9	28	A	,,	19	14	3	+12	9	2
15·02	− 2·49	5·3	5·6	31	*b*	,,	19	19	15	+11	41	3
15·14	−24·22	5·4	5·6	1		Aquarii	20	33	16	+ 0	3	9
15·26	+18·96	5·4	...	98		Herculis	18	0	59	+22	12	5
15·70	+16·09	3·9	...	109		,,	18	18	35	+21	43	0
15·71	− 9·50	1·0	1·1	53	α	Aquilæ	19	44	56	+ 8	33	1
15·84	−10·44	4·9	5·3	59	ξ	,,	19	48	26	+ 8	9	1
15·95	+ 8·55	4·5	...	111		Herculis	18	41	43	+18	2	9
15·98	− 5·33	6·0	6·5			Aquilæ	19	31	12	+11	0	4

Galactic Long.	Lat.	Magn. H.P.	Magn. U.A.	Star.	α 1880. h m s	δ 1880. ° ′
16·15	−13·15	5·6	5·9	63 τ Aquilæ	19 58 17	+ 6 56·4
16·15	− 2·24	5·8	6·2	,,	19 20 49	+ 12 47·0
16·24	+ 0·62	5·4	6·2	,,	19 10 57	+ 14 20·0
16·50	+ 15·86	4·8	...	106 Herculis	18 15 13	+ 21 54·7
16·53	+ 5·81	5·2	5·7	Aquilæ	18 52 54	+ 17 12·0
16·57	+ 1·12	5·5	6·0	,,	19 9 52	+ 14 52·5
16·62	− 7·64	2·8	2·7	50 γ ,,	19 40 33	+ 10 19·3
16·83	− 11·80	6·1	6·2	,,	19 55 11	+ 8 13·7
16·91	+ 23·93	5·4	...	87 Herculis	17 43 57	+ 25 39·8
16·94	+ 6·62	5·8	...	,,	18 50 48	+ 17 57·4
17·09	− 8·73	5·2	5·7	54 *o* Aquilæ	19 45 17	+ 10 7·0
17·14	− 18·18	5·4	5·8	23 Hev. ,,	20 17 14	+ 4 57·6
17·19	− 6·23	5·4	5·8	47 χ ,,	19 36 55	+ 11 32·7
17·20	+ 8·71	5·9	...	Herculis	18 43 39	+ 19 11·7
17·23	+ 3·56	5·9	...	Aquilæ	19 2 34	+ 16 40·5
17·88	− 2·04	5·7	5·9	,,	19 23 51	+ 14 21·0
17·92	+ 16·05	5·7	...	Herculis	18 17 8	+ 23 13·5
17·94	+ 9·94	4·2	...	110 ,,	18 40 30	+ 20 26·0
17·96	+ 22·72	5·6	...	89 ,,	17 50 35	+ 26 4·2
17·98	− 7·51	5·7	6·6	52 π Aquilæ	19 43 3	+ 11 31·1
18·49	+ 15·64	6·0	...	Herculis	18 27 47	+ 23 31·7
18·64	− 9·28	5·4	5·7	61 φ Aquilæ	19 50 33	+ 11 6·4
18·70	− 4·88	5·9	6·1	,,	19 35 32	+ 13 32·3
18·72	+ 17·16	5·5	...	105 Herculis	18 14 14	+ 24 23·8
18·87	+ 25·20	3·5	...	86 μ ,,	17 41 46	+ 27 47·5
19·19	+ 20·18	5·2	... *d*	100 ,,	18 2 59	+ 26 4·9
19·24	+ 14·76	5·7	...	,,	18 24 37	+ 23 47·2
19·27	+ 0·19	6·0	...	2 Sagittæ	19 18 59	+ 16 42·3
19·45	+ 8·99	5·5	...	112 Herculis	18 47 9	+ 21 16·9
19·61	+ 13·43	5·8	...	,,	18 30 31	+ 23 30·6
19·74	− 12·21	6·0	6·4	Aquilæ	20 2 55	+ 10 22·6
20·47	− 2·70	5·6	...	4 ε Sagittæ	19 31 51	+ 16 11·7
20·81	+ 9·07	4·6	...	113 Herculis	18 49 41	+ 22 29·7
20·83	+ 24·97	5·7	...	,,	17 45 44	+ 29 21·3
20·89	+ 10·78	6·0	...	,,	18 43 16	+ 23 22·9
21·39	+ 23·45	3·9	...	92 ξ ,,	17 53 6	+ 29 15·7
21·78	+ 21·28	4·0	...	113 *o* ,,	18 2 52	+ 28 44·8
21·81	− 2·93	4·4	...	6 β Sagittæ	19 35 40	+ 17 11·9

Galactic Long.	Galactic Lat.	Magn. H.P.	Magn. U.A.			Star.	α 1880. h	m	s	δ 1880. °	′	″
21·86	+ 1·43	5·2	...	4		Vulpeculæ	19	20	13	+ 19	33	8
21·86	+ 4·91	5·8	...			„	19	7	28	+ 21	21	2
21·89	+ 4·21	5·8	...	1		Sagittæ	19	10	7	+ 21	1	4
22·13	− 2·46	4·3	...	5	α	„	19	34	44	+ 17	44	3
22·14	+ 4·10	4·7	...	1		Vulpeculæ	19	11	4	+ 21	10	8
22·21	+ 1·43	5·4	...	5		„	19	20	59	+ 19	51	6
22·42	+ 23·64	4·6	...	94	ν	Herculis	17	53	55	+ 30	12	0
22·95	− 0·42	5·0	...	9		Vulpeculæ	19	29	19	+ 19	30	7
22·98	− 16·50	5·9	6·1	1		Delphini	20	24	33	+ 10	29	7
23·03	− 6·40	var.	5·6 − 6·4	10	S	Sagittæ	19	50	34	+ 16	19	1
23·13	+ 18·61	5·0	...	107	*t*	Herculis	18	16	20	+ 28	48	8
23·39	− 6·66	5·3	...	11		Sagittæ	19	52	19	+ 16	28	0
23·50	− 3·48	3·7	...	7	δ	„	19	42	2	+ 18	14	3
23·52	− 8·23	5·2	6·0	14		„	19	58	1	+ 15	41	7
23·52	+ 22·06	5·4	...	99	*b*	Herculis	18	2	28	+ 30	32	7
23·52	+ 12·66	4·9	...			Lyræ	18	41	14	+ 26	32	1
23·55	+ 7·43	5·6	...			Vulpeculæ	19	1	38	+ 24	3	9
23·61	− 18·73	5·1	5·6	7	κ	Delphini	20	33	18	+ 9	39	8
23·73	+ 4·62	5·6	...	2		Vulpeculæ	19	12	39	+ 22	48	6
23·76	− 16·85	4·1	4·2	2	ϵ	Delphini	20	27	29	+ 10	53	8
24·08	+ 19·03	5·6	...	108		Herculis	18	16	20	+ 29	48	2
24·22	− 3·63	5·0	...	8	ζ	Sagittæ	19	43	39	+ 18	50	5
24·27	+ 18·36	5·8	...			Lyræ	18	21	21	+ 29	45	6
24·30	− 6·72	5·5	...	13		Sagittæ	19	54	38	+ 17	11	4
24·30	− 10·84	5·1	5·4	67	ρ	Aquilæ	20	8	43	+ 14	50	0
24·49	− 7·77	6·0	...	15		Sagittæ	19	58	43	+ 16	44	8
24·52	+ 17·72	5·3	5·9	5	ι	Delphini	20	32	5	+ 10	57	6
24·56	+ 9·75	5·3	...			Lyræ	18	54	52	+ 26	3	9
24·78	+ 9·47	5·5	...			„	18	56	25	+ 26	7	3
24·80	+ 21·42	4·9	...	104	A	Herculis	18	7	23	+ 31	22	6
25·32	− 15·98	5·2	5·8	3	η	Delphini	20	28	16	+ 12	37	0
25·78	− 5·36	3·6	...	12	γ	Sagittæ	19	53	25	+ 19	10	0
25·85	+ 16·96	5·4	...			Lyræ	18	28	15	+ 30	27	9
26·28	+ 4·05	6·0	...			Vulp., 3 Cygni	19	20	28	+ 24	41	8
26·43	+ 3·27	4·7	...	6		Vulpeculæ	19	23	43	+ 24	25	4
...	...	5·8	...			„	19	23	57	+ 24	31	4
26·91	− 15·27	4·7	5·2	4	ζ	Delphini	20	29	42	+ 14	15	7
27·05	− 6·33	5·4	...	16	η	Sagittæ	19	59	50	+ 19	38	9

Galactic Long.	Galactic Lat.	Magn. H.P.	Magn. U.A.			Star.	α 1880. h	m	s	δ 1880. °	′
°	°	m	m								
27·13	+ 5·23	5·0	...	3		Vulpeculæ	19	17	56	+ 26	2·0
27·17	− 15·76	3·7	3·5 *d*	6	β	Delphini	20	31	55	+ 14	10·7
27·32	− 10·53	6·2	6·2			Aquilæ	20	14	54	+ 17	25·0
27·40	− 2·15	5·0	...	12		Vulpeculæ	19	45	54	+ 22	18·4
27·43	+ 9·53	5·5	...			Lyræ	19	1	52	+ 28	26·4
28·09	+ 15·57	5·5	...			,,	18	39	21	+ 31	48·6
28·30	+ 20·48	5·4	5·9	16		Delphini	20	49	55	+ 12	6·6
28·41	+ 14·55	5·8	...			Lyræ	18	43	26	+ 31	37·5
28·44	− 15·30	5·9	...			Delphini	20	33	31	+ 15	25·0
28·48	− 16·60	4·6	4·5	11	δ	,,	20	37	51	+ 14	38·7
28·58	− 15·36	4·0	...	9	α	,,	20	34	4	+ 15	29·4
28·85	− 3·43	5·7	...	14		Vulpeculæ	19	54	2	+ 22	46·5
28·93	− 1·80	4·7	...	13		,,	19	48	22	+ 23	46·0
28·97	+ 17·43	5·3	...			Lyræ	18	32	13	+ 33	22·1
29·15	+ 0·97	5·4	...	10		Vulpeculæ	19	38	44	+ 25	29·1
29·26	− 1·87	5·6	...			,,	19	49	26	+ 24	0·3
29·26	− 19·75	5·4	5·6	17		Delphini	20	49	56	+ 13	15·9
29·33	+ 14·52	5·1	...	9	ν_2	Lyræ	18	45	24	+ 32	24·8
29·50	+ 4·60	3·1	...	6	β	Cygni	19	25	53	+ 27	42·5
...	...	5·2	...			,,	19	25	55	+ 27	42·8
29·51	− 1·03	5·8	...			Vulpeculæ	19	46	59	+ 24	41·1
29·55	+ 14·66	5·6	...	8	ν_1	Lyræ	18	45	18	+ 32	40·5
29·78	− 16·50	4·2	... *d*	12	γ	Delphini	20	41	6	+ 15	41·6
29·80	+ 18·10	5·9	...			Lyræ	18	30	53	+ 34	21·7
29·93	+ 12·43	5·1	...	15	λ	,,	18	55	29	+ 31	58·7
30·06	+ 11·31	5·7	...			,,	19	0	24	+ 31	33·9
30·10	+ 21·61	4·4	...	1	κ	,,	18	15	39	+ 36	0·7
30·11	+ 14·83	var.	3·4 − 4·5 *d*	10	β	,,	18	45	39	+ 33	13·5
30·19	+ 6·68	4·9	...	2		Cygni	19	19	24	+ 29	23·3
30·27	− 4·60	5·3	...	17		Vulpeculæ	20	1	44	+ 23	16·2
30·33	+ 12·87	3·3	...	14	γ	Lyræ	18	54	27	+ 32	31·5
30·34	+ 13·34	5·3	...			,,	18	52	31	+ 32	44·9
30·34	+ 9·81	5·7	...	19		,,	19	7	10	+ 31	5·0
30·58	− 2·96	5·9	...			Vulpeculæ	19	56	40	+ 24	28·1
30·73	− 2·94	5·4	...	16		,,	19	56	56	+ 24	36·2
30·91	+ 1·08	var.	3 − ?	11		,, Nova 1670	19	42	39	+ 27	1·2
31·00	+ 11·20	4·9	...	17		Lyræ	19	2	53	+ 32	18·8
31·03	− 9·41	5·9	...			Vulpeculæ	20	20	22	+ 21	1·1

Galactic Long.	Galactic Lat.	Magn. H.P.	Magn. U.A.		Star.	α 1880. h	m	s	δ 1880. °	′
°	°	m	m							
31·25	+ 4·59	5·4	...	9	Cygni	19	30	5	+29	12·0
31·25	+15·12	var. 6·4	−7·3		U Delphini	20	39	59	+17	39·3
31·33	− 6·27	5·5	...	22	Vulpeculæ	20	10	19	+23	8·6
32·36	+ 4·11	4·9	...	12	φ Cygni	19	34	38	+29	52·7
32·45	− 5·83	5·5	...	24	Vulpeculæ	20	11	39	+24	18·1
32·71	−11·91	4·8	...	29	„	20	33	10	+20	46·8
32·94	− 1·17	4·9	...	15	„	19	56	10	+27	25·4
32·99	− 6·92	5·4	...	25	„	20	16	54	+24	4·0
33·00	− 5·01	4·8	...	16 Hev.	„	20	10	11	+25	13·6
33·29	− 3·90	5·9	...	cum. 20	„	20	6	59	+26	7·3
33·30	−11·65	5·9	...		„	20	33	51	+21	23·7
33·45	− 3·38	5·5	...	18	„	20	5	33	+26	33·0
33·53	− 3·66	5·8	...	19	„	20	6	47	+26	27·1
33·64	+17·60	4·3	...	6	ζ_1 Lyræ	18	40	38	+37	28·8
...	...	5·9	...	7	ζ_2 „	18	40	40	+37	28·2
33·81	+15·71	5·3	...	11	δ_1 „	18	49	32	+36	49·3
33·82	+15·54	4·5	...	12	δ_2 „	18	50	18	+36	44·8
33·90	+22·03	4·9	...	2	μ „	18	20	17	+39	26·6
34·14	+19·48	0·2	...	3	α „	18	32	53	+38	40·4
34·30	+12·77	5·2	...	18	ι „	19	3	1	+35	54·8
34·60	−17·07	6·1	...		Delphini	20	54	59	+18	51·8
34·67	+ 4·71	5·8	...		Cygni	19	38	8	+32	8·6
34·87	− 3·79	4·8	...	23	Vulpeculæ	20	10	48	+27	26·8
35·02	− 0·38	5·8	...		Cygni	19	58	41	+29	34·6
35·04	−10·10	5·1	...	28	Vulpeculæ	20	33	18	+23	41·7
35·22	+ 7·71	4·8	...	8	Cygni	19	27	19	+34	11·9
35·31	+ 1·09	5·4	...		„	19	53	52	+30	39·5
35·38	− 3·00	5·3	...	21	Vulpeculæ	20	9	19	+28	19·9
35·41	+15·50	5·9	...		Lyræ	18	53	55	+38	6·3
35·54	+18·47	4·6	... *d*	5	ϵ_2 „	18	40	24	+39	29·3
35·60	+18·50	4·6	... *d*	4	ϵ_1 „	18	40	22	+39	32·7
35·98	+ 3·58	var. 4·0	−?		χ Cygni	19	45	57	+32	36·7
36·21	+ 4·75	5·0	...	17	„	19	41	52	+33	26·9
36·28	+ 9·64	5·1	...	4	„	19	21	50	+36	4·7
36·61	−14·73	5·8	...	33	Vulpeculæ	20	52	55	+21	51·8
36·67	+ 8·78	5·8	...		Cygni	19	26	26	+35	58·6
36·69	− 8·37	5·6	...	27	Vulpeculæ	20	31	58	+26	2·7
36·88	−10·48	5·1	...	30	„	20	39	41	+24	50·5

Galactic Long.	Galactic Lat.	Magn. H.P.	Magn. U.A.		Star.	α 1880. h	m	s	δ 1880. °	′	″
		m	m								
36°94	+12°21	4·3	...	21	θ Lyræ	19	12	12	+37	55	3
37·05	+ 0·74	5·5	...		Cygni	19	59	54	+31	52	8
37·47	+18·86	5·7	...		Lyræ	18	42	23	+41	18	8
37·63	+13·14	4·5	...	20	η ,,	19	9	40	+38	56	4
37·74	+16·39	6·1	...		,,	18	54	51	+40	30	9
37·81	+ 8·27	6·0	...	11	Cygni	19	31	30	+36	40	7
38·30	+17·44	5·4	...		Lyræ	18	51	2	+41	27	0
38·44	+ 3·78	4·0	...	12	η Cygni	19	51	48	+34	45	9
38·58	−20·53	4·3	...	1	Pegasi	21	16	32	+19	17	5
38·71	− 4·62	4·1	...	41	Cygni	20	24	30	+29	58	1
39·04	+ 7·05	5·0	...	15	,,	19	39	57	+37	3	9
39·06	+15·43	6·0	...		Lyræ	19	2	24	+41	13	7
39·16	− 2·23	4·6	...	39	Cygni	20	19	4	+31	48	2
39·37	−10·54	4·7	...	31	Vulpeculæ	20	46	59	+26	38	9
39·59	− 0·23	5·8	...		Cygni	20	10	44	+33	22	0
39·87	+ 5·08	5·7	...		,,	19	50	25	+36	40	8
39·96	−18·68	6·0	...		Pegasi	21	14	47	+21	31	1
40·15	− 9·68	var.	5·5−6·5		T Vulpeculæ	20	46	23	+27	28	1
40·36	+ 2·59	5·5	...	27	b_1 Cygni	20	1	54	+35	38	9
40·46	−10·32	5·1	...	32	Vulpeculæ	20	49	27	+27	36	1
40·48	+ 4·26	5·2	...	25	Cygni	19	55	31	+36	42	9
40·58	+18·31	var.	4·0−4·7	13	R Lyræ	18	51	41	+43	47	3
40·74	− 5·23	6·3	5·6	48	Cygni	20	32	39	+31	9	2
...	...	6·4			,,	20	32	40	+31	6	2
40·87	+ 6·72	5·5	...	19	,,	19	46	19	+38	24	8
41·00	− 0·02	5·2	...	35	,,	20	14	3	+34	36	5
41·21	− 7·11	4·3	...	52	,,	20	40	43	+30	16	6
41·24	+ 5·73	4·7	...	22	,,	19	51	34	+38	10	1
41·30	+ 8·94	6·1	...		,,	19	37	51	+39	58	2
41·40	+ 2·58	4·8	...	28	b_2 ,,	20	4	58	+36	29	2
41·48	−17·53	5·8	...		Pegasi, 34 Vulp.	21	15	39	+23	21	1
41·79	− 5·33	5·8	...	49	Cygni	20	36	11	+31	52	9
41·97	+ 1·73	5·0	...	29	b_3 ,,	20	10	2	+36	26	4
42·28	−17·71	5·6	...		Pegasi	21	18	34	+23	45	5
42·40	+13·41	6·0	...		Lyræ	19	20	9	+43	9	3
42·48	+ 7·72	5·5	...		Cygni	19	46	30	+40	17	7
42·49	+11·21	5·2	...		,,	19	30	47	+42	9	0
42·59	+ 1·21	5·6	...	36	,,	20	13	59	+36	37	5

Galactic Long.	Galactic Lat.	Magn. H.P.	Magn. U.A.				α 1880. h	m	s	δ 1880. °	′	″
42·80	+ 9·44	6·1	...			Cygni	19	39	45	+ 41	49	1
42·84	− 19·12	4·8	...	2		Pegasi	21	24	31	+ 23	6	8
42·97	+ 6·54	5·6	...			Cygni	19	53	4	+ 40	2	8
43·13	− 2·32	4·8	...	47		,,	20	29	14	+ 34	50	4
43·30	+ 10·66	5·3	...	14		,,	19	35	32	+ 42	32	5
43·33	+ 1·93	var. 3 − < 6		34	P	,, Nova 1600	20	13	22	+ 37	38	6
43·40	+ 3·05	var. 6·5 ? −			RS	,,	20	9	2	+ 38	22	1
43·49	− 0 84	6 0	...	42		,,	20	24	46	+ 36	3	3
43·61	+ 0 67	5·7	...			,,	20	19	15	+ 37	5	4
43·75	− 5 07	2·7	...	53	ε	,,	20	41	21	+ 33	31	3
43·78	− 16·46	5 8	...			Vulpeculæ	21	19	14	+ 25	39	5
43·94	+ 18·52	5 0	...	16		Lyræ	18	58	3	+ 46	45	9
44·19	− 11·15	5·5	...			Cygni	21	3	33	+ 29	43	3
42·21	− 4·97	var. 5·5 ? − 6 ?			T	,,	20	42	23	+ 33	56	0
44·33	− 6·53	5·8	...			,,	20	49	2	+ 32	58	9
44 58	− 10·12	6·0	...			,,	21	1	28	+ 30	42	2
44·62	− 3·59	var. 6·4 − 7·7			X	,,	20	38	42	+ 35	9	3
44·70	+ 12·03	5·2	...			,,	19	32	55	+ 44	25	8
44·83	+ 0 66	5·5	...	40		,,	20	23	8	+ 38	2	8
44·86	− 11·78	3·5	...	64	ζ	,,	21	7	50	+ 29	44	1
45·12	+ 3·46	5·5	...			,,	20	12	39	+ 39	59	7
45·14	+ 16 15	6·1	...			,,	19	13	25	+ 46	46	5
45·22	− 15·80	5·4	...	35		Vulpeculæ	21	22	23	+ 27	5	2
45·24	− 22·15	5·4	...	12		Pegasi	21	40	33	+ 22	23	8
45·36	+ 20·29	5·9	...			Draconis	18	51	37	+ 48	42	6
45·64	+ 2·56	2·3	...	37	γ	Cygni	20	17	55	+ 39	52	4
45·80	+ 11·81	5·1	...			,,	19	37	8	+ 45	14	4
45·84	+ 10·98	3·0	...	18	δ	,,	19	41	13	+ 44	50	3
45 84	− 3·62	4·6	...	54	λ	,,	20	42	44	+ 36	3	0
46·31	+ 2·97	6·0	...			,,	20	18	30	+ 40	38	6
46·89	− 19·91	4·2	...	10	κ	Pegasi	21	39	13	+ 25	5	6
47·11	+ 21·19	4·9	...			Draconis	18	50	15	+ 50	33	6
47·36	+ 20·06	5·4	...			,,	18	57	13	+ 50	21	8
47·48	+ 18·07	5·8	... *d*			Cygni	19	8	59	+ 49	37	9
47·74	+ 24 56	5·4	... *d*			Draconis	18	31	11	+ 52	15	5
7·75	+ 9·18	5·7	...			Cygni	19	55	34	+ 45	26	7
47·88	− 11·35	6·1	...			,,	21	16	19	+ 32	6	2
48·13	+ 10·92	5·6	...			,,	19	48	22	+ 46	43	1

Galactic Long.	Galactic Lat.	Magn. H.P.	Magn. U.A.		Star.		α 1880. h	m	s	δ 1880. °	′	″
48°62	−20°93	5·0	...	16	Pegasi		21	47	36	+25	21	7
48·67	−12·61	5·7	...		Cygni		21	23	1	+31	42	0
48·93	+11·38	5·8	...		,,		19	48	35	+47	37	3
48·94	−17·49	4·4	... *d*	78 μ	,,		21	38	47	+28	12	1
48·97	− 9·20	4·4	...	66 ν	,,		21	12	59	+34	23	6
49·11	+ 0·60	5·5	...		,,		20	37	36	+41	17	3
49·25	+ 6·67	5·8	...		,,		20	12	7	+45	12	7
49·33	+15·51	5·7	...		,,		19	28	9	+50	3	0
49·64	+14·74	4·6	...	13 θ	,,		19	33	13	+49	56	6
49·66	+14·68	var. 5·9−?		R	,,		19	33	36	+49	55	8
49·95	− 4·89	5·1	... *d*	61	,,		21	1	32	+38	9	5
49·97	+ 7·68	3·8	...	31 o_1	,,		20	9	51	+46	22	7
49·99	+ 7·77	4·9	...	30	,,		20	9	32	+46	27	2
50·06	+ 5·94	5·8	...		,,		20	18	10	+45	24	6
50·31	+ 9·80	6·0	...		,,		20	0	53	+47	53	0
50·36	+14·14	5·5	...	16 *c*	,,	6·2	19	38	37	+50	14	8
...	...				,,	6·3	19	38	40	+50	14	4
50·42	+15·52	5·6	...		,,		19	31	13	+50	58	8
50·46	−18·64	5·6	...	15	Pegasi		21	47	9	+28	13	9
50·48	+20·50	5·4	...	51	Draconis		19	2	13	+53	12	8
50·52	+16·38	3·9	...	10 ι	Cygni		19	26	41	+51	28	5
50·59	− 1·91	4·1	...	58 ν	,,		20	52	42	+40	42	3
50·71	− 6·51	3·9	...	65 τ	,,		21	10	0	+37	32	0
50·88	−23·34	4·0	...	24 ι	Pegasi		22	1	25	+24	45	6
50·90	−17·20	5·0	...	14	,,		21	44	32	+29	37	0
50·91	+16·96	5·7	...	7	Cygni		19	24	30	+52	4	6
50·95	+ 7·99	4·1	...	32 o_2	,,		20	11	46	+47	20	8
51·20	+18·82	3·9	...	1 κ	,,		19	14	20	+53	8	8
51·37	− 9·01	5·8	...	69	,,		21	20	53	+36	9	0
51·49	+24·27	5·2	...	46 *c*	Draconis		18	40	19	+55	25	1
51·63	+11·25	5·2	...	26 *e*	Cygni		19	57	58	+49	46	3
51·77	+ 2·97	1·5	...	50 α	,,		20	37	20	+44	51	1
51·85	+ 1·01	5·0	...	56	,,		20	45	49	+43	36	5
51·91	− 8·89	5·1	...	70	,,		21	22	28	+36	35	8
52·03	+ 4·88	5·6	...		,,		20	29	59	+46	16	9
52·04	− 5·89	4·3	...	67 σ	,,		21	12	42	+38	53	5
52·48	+ 0·81	4·6	...	57	,,		20	49	0	+43	56	0
52·51	+21·89	5·7	...	49	Draconis		18	58	21	+55	29	2

Galactic Long.	Lat.	Magn. H.P.	Magn. U.A.		Star.	α 1880. h	m	s	δ °	′	″
52·96	−20·26	5·5	...	23	Pegasi	22	0	8	+28	22	9
53·07	+ 1·33	5·6	...		Cygni	20	49	7	+44	43	7
53·13	+12·57	6·0	...		,,	19	56	5	+51	43	6
53·15	+ 0·20	5·9	...		,,	20	54	2	+44	0	3
53·17	+13·25	4·8	...	24	ψ ,,	19	52	32	+52	7	2
53·25	+14·18	5·0	...	20	*d* ,,	19	47	37	+52	41	0
53·26	+ 2·53	5·0	...	55	,,	20	44	51	+45	40	2
53·40	+ 6·79	5·0	...	45	ω_1 ,,	20	26	21	+48	32	8
53·44	+ 7·44	5·6	...	53	,,	20	23	22	+48	59	2
53·58	− 1·03	3·7	...	62	ξ ,,	21	0	34	+43	27	0
53·74	+ 6·79	5·6	...	46	ω_2 ,,	20	27	37	+48	48	9
53·97	− 8·80	5·0	...	72	,,	21	29	52	+37	59	8
54·17	+16·68	5·7	...		,,	19	35	59	+54	41	5
54·30	+20·90	5·2	...	53	Draconis	19	9	24	+56	39	3
54·31	− 3·51	6·0	...		Cygni	21	12	51	+42	10	8
54·42	+ 3·80	5·5	...		,,	20	43	52	+47	23	4
54·67	−12·29	5·7	...		,,	20	3	4	+52	49	0
54·73	+ 1·00	5·2	...	60	,,	20	57	0	+45	41	1
55·02	+ 2·52	5·8	...		,,	20	51	47	+46	57	5
55·13	−10·08	5·5	...	79	,,	21	38	28	+37	44	1
55·27	+20·94	5·3	...	54	Draconis	19	11	47	+57	29	9
55·32	− 2·73	5·0	...	68 A	Cygni	21	13	59	+43	26	5
55·51	+ 2·10	4·6	...	59	f_1 ,,	20	55	45	+47	3	2
55·53	− 7·64	5·1	...	74	,,	21	32	8	+39	52	5
55·55	+20·13	6·0	...		Draconis	19	18	4	+57	25	1
55·60	−22·77	4·9	...	32	Pegasi	22	15	47	+27	43	6
55·74	+ 6·13	5·4	...	51	Cygni	20	38	31	+49	54	6
55·90	+24·30	4·6	...	47	*o* Draconis	18	49	26	+59	14	5
56·14	−10·42	5·8	...		Cygni	21	43	30	+38	5	5
56·20	+ 8·69	6·0	...		,,	20	27	56	+51	54	1
56·24	−17·31	5·7	...	27	Pegasi	22	3	55	+32	35	2
56·38	−17·40	4·4	...	29	π ,,	22	4	40	+32	35	4
56·44	+ 1·36	5·1	...	63	f_2 Cygni	21	2	28	+47	10	0
56·76	− 7·79	5·3	...	77	,,	21	37	33	+40	31	8
56·91	− 7·82	5·5	...		,,	21	38	17	+40	36	4
57·52	+16·12	5·1	...	23	,,	19	50	50	+57	12	6
57·52	+ 4·69	5·9	...		,,	20	52	37	+50	16	1
57·55	+ 4·27	5·5	... *d*		,,	20	54	39	+49	59	8

Galactic Long.	Lat.	Magn. H.P.	Magn. U.A.	Star.			α 1880. h	m	s	δ 1880. °	′	
°	°	m	m									
57·58	+12·05	5·7	...		Cygni		20	15	27	+55	1·3	
57·73	−16·56	5·4	...		Pegasi		22	7	29	+34	0·8	
57·79	− 6·35	var. 3	−?		Cygni.	Nova 1876	21	37	0	+42	17·7	
57·84	− 5·83	5·3	...	75	„		21	35	29	+42	43·8	
58·09	− 1·51	5·5	...		„		21	20	55	+46	11·7	
58·16	+13·30	4·4	...	33	„		20	10	36	+56	12·0	
58·49	− 3·34	4·2	...	73 ρ	„		21	29	28	+45	3·7	
58·50	− 2·11	5·3	...	71 g	„		21	25	1	+46	0·7	
58·61	− 3·74	var. 6·1	−6·7	W	„		21	31	29	+44	50·3	
58·89	+16·48	5·2	...		Cephei		19	53	38	+58	31·5	
59·07	+11·19	5·9	...		Cygni		20	26	27	+55	39·9	
59·26	+ 1·21	5·4	...		„		21	15	21	+49	0·2	
59·48	+ 0·84	5·8	...		„		21	17	50	+48	52·5	
59·52	+17·16	6·0	...		„		19	51	27	+59	23·5	
59·70	− 0·10	5·3	...		„		21	22	36	+48	18·8	
60·09	−14·30	4·1	...	1	Lacertæ		22	10	44	+37	9·1	
60·11	− 0·99	cum.		Mess. 39	Cygni	$6^m·5$	21	27	57	+47	54·9	
60·14	− 0·82					$6^m·3$	21	27	24	+48	3·4	
60·85	−12·43	4·6	...	1 Hev.	Lacertæ		22	8	43	+39	7·2	
61·05	+ 5·12	5·7	...		Cygni		21	6	33	+53	4·4	
61·06	−23·63	3·1	...	44 η	Pegasi		22	37	23	+29	35·6	
61·20	+ 0·11	5·7	...		Cygni		21	28	42	+49	26·7	
61·65	+10·43	4·6	...	6 Hev.	Cephei		20	42	22	+57	9·0	
61·96	− 7·21	5·6	...		Lacertæ		21	58	6	+44	4·3	
62·07	+ 4·73	6·0	...		Cygni		21	13	17	+53	29·6	
62·10	+ 8·85	6·1	...		Cephei		20	53	4	+56	25·5	
62·35	+17·05	5·6	...	66	Draconis		20	3	38	+61	38·8	
62·41	+ 2·92	5·7	...		Cygni		21	22	48	+52	22·7	
62·49	+ 8·11	5·9	...		Cephei		20	58	51	+56	11·8	
62·51	− 1·83	4·4	...	81 π_2	Cygni		21	42	22	+48	45·3	
62·62	− 7·22	5·3	...		Lacertæ		22	1	10	+44	25 8	
62·79	− 9·81	5·7	...		„		22	9	42	+42	21·5	
62·81	+16·49	5·7	...	68	Draconis		20	9	37	+61	42·9	
62·83	+ 2·62	5·9	...		Cygni		21	26	21	+52	25·8	
63·09	+ 0·11	4·9	...	80 π_1	„		21	37	50	−50	38·6	
63·17	−13·73	6·1	...		Lacertæ		22	22	11	+39	11·9	
63·50	+15·80	5·6	...	71	Draconis		20	17	36	+61	52·6	
63·54	+12 77	5·9	...		Cephei		20	37	45	+60	4·3	

Galactic Long.	Galactic Lat.	Magn. H.P.	Magn. U.A.		Star.	α 1880. h m s	δ 1880. ° ′ ″
°	°	m	m				
63·62	+23·10	4·6	...	58 π	Draconis	19 20 3	+65 90·2
64·01	− 7·63	5·8	...		Lacertæ	22 8 53	+44 50·7
64·01	−14·24	5·6	...		,,	22 27 8	+39 9·8
64·17	−16·83	6·0	...		,,	22 34 9	+36 58·1
64·30	+10·26	5·8	...		Cephei	20 56 28	+58 58·2
64·53	−14·69	5·3	... *d*	8	Lacertæ	22 30 32	+39 0·8
64·68	+18·86	5·4	...	64 *e*	Draconis	20 0 12	+64 29·1
64·81	+15 28	4·3	...	2 θ	Cephei	20 27 34	+62 35·5
64·84	−15·52	5·0	...	10	Lacertæ	22 33 53	+38 25·6
64·97	+13·11	3·6	...	3 η	Cephei	20 42 51	+61 22·4
65·10	+16·61	5 8	...		Draconis	20 19 29	+63 35·7
65·34	+24·51	3·2	...	57 δ	,,	19 12 31	+67 27·0
65·38	−11·16	4·6	...	6	Lacertæ	22 25 18	+42 30·5
65·51	+ 7·86	5·7	...		Cephei	21 15 56	+58 7·0
65·67	− 7·36	4·8	...	2	Lacertæ	22 16 4	+45 56·0
65·79	+ 9·50	5·5	...		Cephei	21 8 45	+59 29·6
65·80	−14·68	5·1	...	12	Lacertæ	22 36 6	+39 35·9
66·53	− 0·36	5·6	...		Cygni	21 57 27	+52 18·2
66·57	− 2·86	5·4	...		Lacertæ	22 6 30	+50 13·9
66·61	−19·40	5·6	...		,,	22 50 9	+35 42·7
66·72	+ 5·28	5·5	...	13 Hev.	Cephei	21 35 14	+56 56·8
66·80	−18·68	6·0	...		Lacertæ	22 49 28	+36 26·2
67·01	−13·49	5·1	...	13	,,	22 38 44	+41 11·4
67·09	+ 2·86	5·5	...		Cygni	21 47 57	+55 14·8
67·48	+20·23	4·6	...	67 ρ	Draconis	20 2 16	+67 31·9
67·52	− 7·08	4·6	...	5	Lacertæ	22 24 32	+47 5·6
67·56	−11·01	4·7	...	11	,,	22 35 15	+43 39·0
67·69	− 5·14	4·6	...	4	,,	22 19 39	+48 52·1
67·87	+ 8·21	5·4	...		Cephei	21 27 42	+59 55·8
67·89	+ 3·26	6·1	...	13	,,	21 50 51	+56 2·6
68·00	+ 5·91	var. 4?−5?		μ	,,	21 39 50	+58 13·8
68·12	+23·52	4·7	...	61 σ	Draconis	19 32 35	+69 27·4
68·14	−13·89	5·8	...	14	Lacertæ	22 44 57	+41 19·1
68·24	+10·78	2·6	...	5 α	Cephei	21 15 43	+62 4·6
68·29	−16·88	6·1	...		Lacertæ	22 52 8	+38 40·0
68·60	−11·22	5·7	...		,,	22 40 51	+43 54·8
68·76	+16·31	5·5	...	4	Cephei	20 41 41	+66 13·3
68·96	− 2·68	4·5	...	3	Lacertæ	22 18 51	+51 37·7

Galactic Long.	Lat.	Magn. H.P.	U.A.			Star.	α 1880. h	m	s	δ 1880. °	′	″
°	°	m	m									
69·03	−12·80	5·1	...	15		Lacertæ	22	46	37	+42	40	5
69·04	− 4·98	3·9	...	7		„	22	26	21	+49	39	9
69·04	−14·69	5·6	...	16		„	22	50	55	+40	57	6
69·25	+22·47	3·9	...	63	ϵ	Draconis	19	48	35	+69	57	7
69·36	+19·37	6·1	...			„	20	19	34	+68	29	8
69·49	+ 3·82	5·5	...	14		Cephei	21	58	3	+57	25	3
69·58	+ 8·89	4·8	...	9		„	21	34	42	+61	32	4
69·60	+ 7·11	5·6	...	12		„	21	43	53	+60	8	8
69·67	+ 7·58	4·5	...	10	ν	„	21	41	59	+60	34	0
69·92	+ 2·13	5·4	...			„	22	7	29	+56	14	6
69·92	−11·62	5·7	...			Lacertæ	22	48	18	+44	6	7
69·93	+12·35	5·3	...	6		Cephei	21	16	53	+64	21	8
70·31	−14·44	3·8	...	1	ο	Andromedæ	22	56	24	+41	40	9
70·40	+ 2·07	4·2	...	23	ϵ	Cephei	22	10	37	+56	26	7
70·46	+ 8·67	6·0	...			„	21	41	36	+61	54	5
70·49	− 4·32	4·8	...	9		Lacertæ	22	32	27	+50	55	5
70·56	+ 3·34	3·5	...	21	ζ	Cephei	22	6	42	+57	36	6
70·61	−14·09	5·1	...	2		Andromedæ	22	57	5	+42	6	8
71·30	+ 4·31	5·3	...	22	λ	Cephei	22	7	24	+58	49	4
71·91	−15·57	var. 5·6 − 10			T	„	21	7	57	+68	0	2
71·94	− 2·48	6·0	...			Lacertæ	22	35	26	+53	13	2
71·95	+13·15	5·4	...	7		Cephei	21	25	27	+66	17	1
72·06	− 8·27	5·1	...			Lacertæ	22	51	47	+48	2	6
72·09	+ 5·40	5·4	...			Cephei	22	8	4	+60	10	0
72·24	− 2·56	6·0	...			Lacertæ	22	37	26	+53	16	9
72·25	+ 7·12	5·2	...	19		Cephei	22	1	27	+61	41	8
72·25	+ 8·78	5·2	...			„	21	53	16	+63	3	3
72·25	−19·81	5·8	...	12		Andromedæ	23	15	6	+37	31	6
72·29	−13·90	5·9	...	6		„	23	4	55	+42	54	0
72·40	+ 0·42	var. 5·8 − 6·8			W	Cephei	22	29	1	+56	0	3
72·44	− 7·27	5·2	...			Lacertæ	22	51	10	+49	5	6
72·53	+ 7·55	5·4	...	20		Cephei	22	1	22	+62	12	0
72·61	+ 7·90	5·4	...	18		„	22	0	17	+62	32	2
...	...	6·6	...			„	22	24	42	+57	47	4
72·73	+ 2·28	var. 3·7 − 4·9		27	δ	„	22	24	43	+57	48	1
72·88	−11·08	5·7	...	4		Andromedæ	23	2	10	+45	44	3
73·05	−16·07	6·0	...	9		„	23	12	42	+41	7	1
73·08	+ 0·25	5·6	...			Cephei	22	33	55	+56	10	3

Galactic Long.	Galactic Lat.	Magn. H.P.	Magn. U.A.		Star.	α 1880. h	m	s	δ 1880. °	′	″
°	°	m	m								
73·31	− 2·52	6·0	...		Lacertæ	22	43	49	+53	46	9
73·47	+ 9·14	4·4	... *d*	17	ξ Cephei	22	0	19	+64	2	6
73·71	− 7·47	4·9	...	3	Andromedæ	22	58	48	+49	24	0
73·97	− 8·38	5·9	...	5	„	23	2	19	+48	38	5
73·99	+ 17·75	6·0	...		Cephei	21	5	40	+70	57	0
74·07	− 1·23	5·4	...		„	22	44	49	+55	16	0
74·64	− 19·25	5·3	...	14	Andromedæ	23	25	23	+38	34	6
74·65	+ 15·84	3·4	...	8	β Cephei	21	27	6	+70	2	0
74·75	− 8·56	4·7	...	7	Andromedæ	23	7	3	+48	45	0
75·02	− 15·51	5·8	...	13	„	23	21	21	+42	15	1
75·35	+ 21·88	5·1	...	73	Draconis	20	33	4	+74	32	6
75·42	− 9·21	4·9	...	8	Andromedæ	23	12	11	+48	21	6
75·57	− 9·68	5·3	...	11	„	23	13	55	+47	58	0
75·61	− 18·48	5·5	...	15	„	23	28	45	+39	34	5
75·80	− 0·86	5·6	...		Cassiopeiæ	22	55	2	+56	18	1
75·86	+ 8·23	5·6	...	26	Cephei	22	23	14	+64	31	2
76·00	+ 15·67	4·8	...	11	„	21	40	10	+70	45	5
76·21	+ 6·27	5·2	...	30	„	22	34	24	+62	57	7
76·67	− 5·19	5·6	...		Andromedæ	23	11	14	+52	34	0
76·69	+ 3·94	5·8	...		Cephei	22	46	42	+61	3	5
76·76	+ 16·38	5·4	...		„ , 78 Drac.	21	41	36	+71	46	2
77·13	− 15·75	4·3	...	17	ι Andromedæ	23	32	15	+42	36	2
77·22	+ 13·30	5·5	...		Cephei	22	7	54	+69	32	4
77·23	+ 24·40	4·4	...	1	κ „	20	12	54	+77	21	0
77·48	− 1·29	5·5	...		Cassiopeiæ	23	7	31	+56	30	4
77·53	+ 1·11	5·0	...	1	„	23	1	33	+58	46	3
77·82	− 14·82	4·4	...	19	κ Andromedæ	23	34	30	+43	40	2
77·87	+ 0·89	5·4	...	2	Cassiopeiæ	23	4	36	+58	40	9
77·89	− 12·62	4·0	...	16	λ Andromedæ	23	31	42	+45	48	5
78·30	− 16·30	5·2	...	16	Cephei	21	57	32	+72	36	5
78·44	+ 15·16	5·0	...	24	„	22	7	30	+71	45	0
78·44	+ 8·09	3·6	...	32	ι „	22	45	25	+65	34	2
78·68	+ 13·15	5·7	...		„	22	22	54	+70	9	6
78·76	+ 12·11	6·0	...		„	22	29	34	+69	17	5
79·20	− 8·83	5·3	...	18	Andromedæ	23	33	20	+49	48	4
79·20	+ 15·83	6·0	...		Cephei	22	10	42	+72	42	6
79·33	− 13·04	5·0	...	20	ψ Andromedæ	23	40	5	+45	45	2
79·65	+ 1·10	6·0	...		Cassiopeiæ	23	17	12	+59	28	5

Galactic Long.	Lat.	Magn. H.P.	Magn. U.A.		Star.	α 1880. h	m	s	δ 1880. °	′	″
80·10	− 0·69	4·8	...	1 Hev.	Cassiopeiæ	23	24	30	+ 57	53	3
80·12	+ 8·47	5·4	...		Cephei	22	58	59	+ 66	33	8
80·50	− 17·13	6·0	...		Andromedæ	23	50	59	+ 41	59	4
80·58	+ 3·07	5·2	...	4	Cassiopeiæ	23	19	31	+ 61	37	4
80·82	+ 15·27	5·3	...	31	Cephei	22	32	48	+ 73	1	2
81·80	+ 8·80	4·9	...*d*	34 *o*	„	23	13	42	+ 67	27	3
81·83	− 17·93	5·9	...		Andromedæ	23	58	27	+ 41	25	5
81·96	+ 17·62	5·7	...		Cephei	22	30	10	+ 75	36	5
82·00	− 2·32	5·7	...		Cassiopeiæ	23	41	10	+ 56	47	1
82·27	− 1·16	5·2	...	5 *τ*	„	23	41	12	+ 57	59	0
82·40	− 8·60	var. 4·8	−?	R	„	23	52	19	+ 50	43	2
82·49	+ 11·50	5·5	...		Cephei	23	11	0	+ 70	14	0
82·73	− 4·26	5·5	...		Cassiopeiæ	23	51	6	+ 55	2	3
82·97	− 2·48	4·6	...	7 *ρ*	„	23	48	24	+ 56	49	9
83·08	+ 19·97	5·8	...	28	Cephei	12	25	47	+ 78	10	4
83·24	+ 19·92	5·4	...	29 *ρ*	„	22	28	48	+ 78	12	5
83·26	+ 2·27	5·5	...	6	Cassiopeiæ	23	43	0	+ 61	32	8
83·28	− 4·32	5·0	...*d*	8 *σ*	„	23	52	56	+ 55	5	2
83·36	+ 10·53	5·7	...		Cephei	23	22	13	+ 69	42	0
83·41	− 19·22	5·8	...	23	Andromedæ	0	7	17	+ 40	22	4
83·51	− 14·15	4·9	...	22	„	0	4	5	+ 45	24	3
83·60	+ 14·67	5·6	...		Cephei	23	10	21	+ 73	34	6
83·61	+ 15·91	4·5	...	33 *π*	„	23	4	5	+ 74	44	3
83·82	− 21·64	4·3	...	24 *θ*	Andromedæ	0	10	50	+ 38	0	9
83·85	− 23·56	4·6	...	25 *σ*	„	0	12	4	+ 36	7	2
84·03	+ 6·78	6·0	...		Cephei	23	40	54	+ 66	6	9
84·28	− 16·75	6·0	...		Andromedæ	0	10	4	+ 42	55	7
84·38	+ 7·74	5·1	...	51 Hev.	Cephei	23	42	11	+ 67	8	4
84·56	+ 1·01	5·7	...		Cassiopeiæ	23	55	30	+ 60	33	3
84·58	− 22·44	5·3	...	27 *ρ*	Andromedæ	0	14	48	+ 37	18	2
84·75	− 16·60	5·9	...	26	„	0	12	23	+ 43	7	5
84·94	− 12·44	5·8	...		„	0	10	49	+ 47	16	8
84·98	+ 1·04	6·0	...		Cassiopeiæ	23	58	55	+ 60	38	7
85·15	− 1·18	2·4	...	11 *β*	„	0	2	47	+ 58	29	3
85·20	+ 13·94	6·0	...		Cephei	23	24	8	+ 73	20	3
85·26	− 21·89	var. 5·6	−?	R	Andromedæ	0	17	42	+ 37	54	8
85·57	+ 3·86	5·5	...	10	Cassiopeiæ	0	0	13	+ 63	31	7
85·65	+ 6·86	5·8	...		Cephei	23	58	29	+ 66	29	8

Galactic Long.	Galactic Lat.	Magn. H.P.	Magn. U.A.			Star.	α 1880. h	m	s	δ 1880. °	′	″
		m	m									
86·17	+17·44	3·4	...		γ	Ceph	23	34	26	+76	57	8
86·17	+23·34	4·8	...			„	22	47	54	+82	31	0
86·42	+ 1·05	5·8	...			Cassiopeiæ	0	10	31	+60	51	0
86·50	− 8·50	5·4	...			„	0	17	48	+51	21	3
86·58	−16·15	5·2	...			Andromedæ	0	21	47	+43	43	8
86·71	− 7·49	5·8	...			Cassiopeiæ	0	18	37	+52	22	9
86·96	+24·31	5·0	...			Cephei	22	55	18	+83	42	2
87·37	+ 1·27	5·4	...		12	Cassiopeiæ	0	18	11	+61	9	9
87·56	+ 3·58	...	...		B	„ Nova 1572	0	18	9	+63	28	9
87·80	− 6·08	4·8	...		14	λ „	0	25	9	+53	51	6
88·17	−16·14	5·4	...			Andromedæ	0	30	15	+43	49	6
88·39	+ 2·31	4·2	...		15	κ Cassiopeiæ	0	26	11	+62	16	2
88·47	− 6·46	5·0	...			„	0	29	28	+53	30	4
88·54	− 6·74	3·7	...		17	ζ „	0	30	17	+53	14	2
88·69	− 0·31	5·6	...			„	0	29	39	+59	39	9
88·72	−11·29	5·6	...			„	0	32	22	+48	41	7
88·88	−21·29	5·6	...		32	Andromedæ	0	34	37	+38	48	0
89·12	− 4·12	var.	2·2 − 2·8		18	α Cassiopeiæ	0	33	42	+55	52	7
89·24	−10·14	4·8	...		19	ξ „	0	35	23	+49	51	2
89·24	−19·38	neb.	...	Mess.	31	Andromedæ	0	36	9	+40	36	6
89·44	−13·62	5·0	...		20	π Cassiopeiæ	0	36	50	+46	22	1
89·48	+ 5·49	5·9	...			„	0	34	55	+65	29	3
89·61	−12·79	5·5	...			„	0	37	47	+47	12	6
89·66	−12·37	4·6	...		22	*o* „	0	38	3	+47	37	6
89·78	− 5·43	5·4	...			„	0	38	27	+54	33	9
89·84	+14·21	5·6	...		21	„	0	37	45	+74	19	9
89·91	−15·80	5·9	...			Andromedæ	0	39	32	+44	12	3
88·98	+14·19	5·3	...		23	Cassiopeiæ	0	39	47	+74	11	5
90·12	+23·06	5·5	...			Cephei	0	43	45	+83	3	3
90·23	+28·69	2·2	...			α Urs. min., Polaris	1	14	45	+88	40	1
90·25	− 2·82	3·6	...	*d*	24	η Cassiopeiæ	0	41	51	+57	10	7
90·27	+25·62	4·5	...		43	Hev. Ceph., 2 Urs. min.	0	52	36	+85	36	7
90·33	− 9·69	5·0	...		25	ν Cassiopeiæ	0	42	2	+50	18	8
90·39	+ 3·60	5·4	...			„	0	43	27	+63	35	6
90·65	−19·56	4·4	...		35	ν Andromedæ	0	43	12	+40	25	5
90·67	−15·65	5·9	...			„	0	43	36	+44	20	9
90·73	+ 0·47	4·9	...			Cassiopeiæ	0	45	55	+60	27	9
91·03	− 1·66	5·1	...		26	ν_1 „	0	47	53	+58	19	4

Galactic Long.	Galactic Lat.	Magn. H.P.	Magn. U.A.		Star.	α 1880. h m s	δ 1880. ° ′
°	°	m	m				
91·10	+19·08	5·6	...		Cephei	1 1 57	+79 2·1
91·13	+ 5·73	6·0	...		Cassiopeiæ	0 50 56	+65 42·2
91·18	+ 0·08	2·3	...	27 γ	„	0 49 29	+60 4·0
91·20	− 0·26	5·5	...		„	0 49 34	+59 42·8
91·24	− 1·44	4·9	...	28 v_2	„	0 49 32	+58 32·0
91·80	+18·21	5·9	...		Cephei	1 13 16	+78 5·8
92·05	+ 1·00	5·9	...		Cassiopeiæ	0 56 55	+60 56·2
92·12	+ 8·23	5·3	...	31	„	1 2 33	+68 8·4
92·15	−22·11	3·9	...	37 μ	Andromedæ	0 50 6	+37 50·9
92·43	+12·12	var. 6·7	−?	S	Cassiopeiæ	1 10 51	+71 58·7
92·48	−15·87	5·7	... *d*		Andromedæ	0 53 16	+44 4·0
92·59	+ 4·50	5·5	...	32	Cassiopeiæ	1 3 53	+64 22·8
92·64	+ 3·68	5·4	...		„	1 3 41	+63 33·8
92·84	− 2·27	5·7	...		„	1 1 13	+57 37·3
92·97	− 5·56	5·2	...	30 μ	„	1 0 18	+54 19·9
93·18	+21·17	6·0	...		Cephei	1 54 44	+80 43·2
93·24	−19·20	5·9	...	39	Andromedæ	0 56 10	+40 42·0
93·46	− 5·32	4·4	...	33 θ	Cassiopeiæ	1 3 48	+54 30·7
93·60	+ 7·75	4·8	...	36 ψ	„	1 17 28	+67 30·2
93·72	+ 9·94	5·9	...	38	„	1 22 19	+69 38·8
93·76	+12·78	5·5	...	40	„	1 28 57	+72 25·7
93·97	−13·23	4·3	...	42 φ	Andromedæ	1 2 32	+46 36·1
94·01	−16·54	5·3	...	41	„	1 1 8	+43 18·1
94·33	+17·30	5·4	...	47	Cassiopeiæ	1 53 9	+76 42·2
94·35	− 2·13	5·2	...	34 φ	„	1 12 33	+57 36·0
94·41	+ 5·83	5·9	...		„	1 22 30	+65 28·6
94·52	+21·89	5·9	...		Cephei	2 30 36	+80 55·9
94·62	+10·49	5·1	...	42	Cassiopeiæ	1 33 39	+70 0·9
94·64	−18·35	5·7	...	44	Andromedæ	1 3 30	+41 26·6
94·74	+16·20	5·3	...	49	Cassiopeiæ	1 54 5	+75 32·2
94·79	− 0·04	2·8	...	37 δ	„	1 17 59	+59 36·6
95·14	+ 7·96	5·5	...	43	„	1 33 28	+67 26·1
95·19	−24·79	2·2	...	43 β	Andromedæ	1 3 1	+34 59·0
95·28	−22·67	5·8	...	45	„	1 4 25	+37 5·1
95·76	+12·64	4·1	...	50	Cassiopeiæ	1 53 13	+71 50·4
95·97	− 0·86	4·9	...	39 χ	„	1 26 6	+58 36·9
96·10	+11·16	4·6	...	48 A	„	1 52 7	+70 19·4
96·22	+ 8·88	5·1	...	46 ω	„	1 46 42	+68 5·7
96·33	+20·53	5·6	...	47 Hev.	Cephei	2 50 12	+78 56·5

Galactic Long.	Galactic Lat.	Magn. H.P.	Magn. U.A.	Star.	α 1880. h	m	s	δ 1880. °	′
°	°	m	m						
96·45	−14·67	4·9	...	46 ξ Andromedæ	1	15	17	+44	54·0
96·75	− 2·00	5·8	...	Cassiopeiæ	1	30	18	+57	21·9
96·86	+ 0·66	5·5	...	44 „	1	35	13	+59	56·7
97·38	+ 4·00	3·6	...	45 ϵ „	1	45	46	+63	4·7
97·41	−14·65	4·8	...	48 ω Andromedæ	1	20	29	+44	47·2
97·46	−13·02	5·2	...	49 A „	1	22	55	+46	23·3
97·68	+ 5·07	5·2	...	Cassiopeiæ	1	50	48	+64	2·2
97·72	+23·27	5·2	...	49 Hev. Cephei	3	50	2	+80	21·9
97·93	−22·35	5·5	...	47 Andromedæ	1	16	49	+37	5·6
97·93	+ 5·44	5·7	...	52 Cassiopeiæ	1	53	57	+64	19·3
97·94	+19·52	5·5	...	48 Hev. Cephei	3	5	9	+77	17·5
98·08	+13·94	5·3	...	Cassiopeiæ	2	26	39	+72	17·5
98·09	+ 4·95	5·5	...	53 „	1	54	8	+63	48·6
98·57	+ 7·35	6·1	...	55 „	2	5	5	+65	57·6
98·59	−11·16	3·7	...	υ Persei, 51 Andr.	1	30	38	+48	1·2
99·06	− 8·95	4·2	...	φ Persei, 54 Andr.	1	36	9	+50	5·0
99·24	− 4·33	5·5	...	1 Persei	1	44	7	+54	33·1
99·46	+16·47	4·7	...	37 Hev. Cassiopeiæ	2	58	58	+73	56·1
99·60	+ 8·68	4·6	...	ι „	2	19	12	+66	51·7
99·72	−15·27	5·1	...	52 χ Andromedæ	1	32	9	+43	46·5
99·89	−18·26	4·2	...	50 υ „	1	29	45	+40	48·3
100·20	−16·28	5·6	...	„	1	33	28	+42	41·4
100·36	− 8·53	5·4	...	2 Persei	1	44	32	+50	11·9
100·54	−16·90	5·2	...	Andromedæ	1	34	29	+42	0·7
100·63	−11·46	6·0	...	Persei	1	41	49	+47	17·9
100·80	−18·94	4·9	...	53 τ Andromedæ	1	33	30	+39	58·1
100·81	+ 9·68	5·9	...	Cassiopeiæ	2	34	31	+67	18·8
100·85	− 4·56	4·9	...	4 *g* Persei	1	54	19	+53	54·4
101·76	− 9·80	5·7	...	3 „	1	50	46	+48	37·0
101·86	− 0·64	6·0	...	8 „	2	9	31	+57	20·5
102·26	− 1·31	cum.	...	*h* „	6m·8	2	10	39	+56	34·8
102·58	− 1·08	cum.	...	χ „	6m·7	2	13	27	+56	41·5
103·13	− 2·36	5·2	...	9 *i* „		2	14	0	+55	17·7
103·23	−18·21	5·6	...	55 Andromedæ		1	46	6	+40	8·2
103·53	− 7·29	5·4	...	6 Persei		2	5	38	+50	30·4
103·72	+15·72	4·6	...	5 Hev. Camelop.		3	37	43	+70	57·6
103·96	+15·31	5·3	...	„		3	36	46	+70	29·8
104·65	+ 7·45	5·8	...	Cassiopeiæ		2	57	17	+63	35·4
104·75	−16·12	2·1	... *d*	51 γ Andromedæ		1	56	32	+41	45·2

Galactic Long.	Lat.	Magn. H.P.	Magn. U.A.		Star.	α 1880. h m s	δ 1880. ° ′
		m	m				
104°76	+ 4°60	5·6	...		Cassiopeiæ	2 46 27	+61 1·8
...	...	5·8	...		Andromedæ	1 48 49	+36 41·3
104·81	− 21·40	5·7	...	56	„	1 49 2	+36 39·7
104·95	+ 9·51	4·8	...	1 Hev.	Camelop.	3 9 27	+65 12·7
104·97	− 7·75	5·6	...	63	Andromedæ	2 13 2	+49 36·0
105·28	+ 18·94	6·0	...		Camelop.	4 19 37	+72 16·0
105·54	− 7·69	5·5	...	64	Andromedæ	2 16 27	+49 27·7
105·62	− 7·37	4 9	...	65	„	2 17 38	+49 44·1
105·70	− 10·44	5·2	...	62 *c*	„	2 11 32	+46 49·5
105·75	+ 22·04	5·5	...		Camelop.	4 57 15	+73 47·3
105·79	− 13·77	5·1	...	60 *b*	Andromedæ	2 5 42	+43 40·3
105·97	+ 8 91	5·6	...		Camelop.	3 14 16	+64 9·3
106·12	− 1·89	5·6	...	11	Persei	2 34 28	+54 35·6
106·15	+ 12·30	5·8	...		Camelop.	3 34 40	+66 49·4
106·60	+ 14·65	6·1	...		„	3 54 1	+68 20·7
106·74	− 0·70	3·9	...	15 *η*	Persei	2 41 57	+55 23·8
106·79	− 3·32	6·1	...		„	2 34 33	+53 0·8
107·10	− 20·07	4·8	...	58	Andromedæ	2 1 15	+37 17·3
107·16	− 18·80	5·6	...	59	„	2 3 36	+38 28·3
107·52	+ 11·23	4·6	...	7 Hev.	Camelop.	3 38 33	+65 9·2
108·17	+ 0·99	5·0	...	*k*	Persei	2 56 32	+56 14·0
108·34	− 22·71	3·1	...	4 *β*	Trianguli	2 2 24	+24 25·1
108·36	+ 8·93	5·2	...		Camelop.	3 31 45	+62 49·5
108·53	− 15·79	6·0	...	47 Hev.	Andromedæ	2 15 22	+40 51·0
108·62	+ 9·30	5·0	...		Camelop.	3 35 33	+62 57·8
108·64	− 3·25	4·0	...	18 *τ*	Persei	2 45 45	+52 16·2
108·80	− 7·12	4·2	...	13 *θ*	„	2 36 1	+48 43·2
109·05	+ 5·37	4·2	...	2 Hev.	Camelop.	3 19 22	+59 31 2
109·15	+ 2·08	5·9	...		Persei	2 6 37	+56 41·5
109·68	− 1·84	3·1	...	23 *γ*	„	2 56 7	+53 2·1
109·73	− 3·13	5·1	... *d*		„	2 52 19	+51 52·4
109·75	+ 4·56	4·8	...	3 Hev.	Camelop.	3 20 20	+58 27·7
109·80	+ 9·92	4·8	...		„	3 46 51	+62 43·1
110·17	− 22·89	5·0	...	8 *δ*	Trianguli	2 9 44	+33 40·3
110·22	+ 13·16	5·5	...		Camelop.	4 9 24	+64 50·7
110·41	− 23·21	4·2	...	9 *γ*	Trianguli	2 10 11	+33 17·5
110·42	+ 6·40	5·9	...		Camelop.	3 32 50	+59 34·8
110·98	− 11·57	5·6	...	14	Persei	2 36 17	+43 47·1

Galactic Long.	Galactic Lat.	Magn. H.P.	Magn. U.A.			Star.	α 1880. h	m	s	δ 1880. °	′
111·03	− 8·69	5·8	...			Persei	2	43	40	+ 46	20·7
111·07	+ 8·41	5·1	...			Camelop.	3	46	55	+ 60	45·3
111·21	+ 10·17	cum.		VII.	47	„	6m·5	3	57	16 + 62	0·3
111·31	− 13·10	cum.		Mess.	34	Persei	8m·0	2	34	15 + 42	16·6
111·49	− 13·22					„	7m·2	2	34	53 + 42	4·6
111·56	+ 16·55	4·4	...		9	Camelop.		4	42	8 + 66	8·2
111·62	− 8·04	5·8	...			Persei		2	48	27 + 46	39·6
111·73	+ 1·71	5·0	...	4	Hev.	Camelop.		3	20	52 + 55	2·1
112·05	+ 13·82	6·0	...			„		4	25	10 + 64	0·5
112·08	− 7·71	5·6	...			Persei		2	51	42 + 46	44·3
112·17	− 4·89	4·1	...		ι	„		3	0	25 + 49	9·2
112·32	+ 10·56	5·6	...			Camelop.		4	6	20 + 61	32·8
112·43	+ 1·67	5·7	...			„		3	24	31 + 54	34·0
112·44	− 19·91	5·3	...		14	Trianguli		2	24	47 + 35	36·8
112·50	− 3·14	5·2	...			Persei		3	7	38 + 50	29·5
112·52	− 15·39	4·9	...		12	„		2	34	41 + 39	41·1
112·60	− 18·55	6·0	...			„		2	28	15 + 36	47·2
112·78	+ 5·72	5·8	...			Camelop.		3	43	59 + 57	37·1
113·07	+ 7·55	4·9	...			„		3	54	28 + 58	49·2
113·21	− 3·54	5·3	...		29	Persei		3	10	5 + 49	46·8
113·34	− 3·60	5·0	...		31	„		3	10	36 + 49	39·3
113·54	+ 10·19	5·7	...			Camelop.		4	11	22 + 60	26·9
113·77	+ 14·68	5·9	...			„		4	40	52 + 63	17·9
113·82	− 20·92	5·6	...		15	Trianguli		2	28	30 + 34	9·8
114·17	− 3·35	1·9	...		33 α	Persei		3	15	46 + 49	25·9
114·38	− 3·98	5·2	...			Persei		3	14	43 + 48	46·9
114·46	+ 9·52	6·0	...			Camelop.		4	12	43 + 59	19·8
114·73	− 8·91	4·0	...		27 κ	Persei		3	1	24 + 44	24·1
114·81	− 3·81	5·9	...			„		3	17	27 + 48	41·7
114·84	+ 20·40	5·8	...			Camelop.		5	30	25 + 65	37·8
114·87	− 16·36	4·4	...		16	Persei		2	43	1 + 37	49·4
115·04	− 3·17	4·8	...		34	„		3	20	48 + 49	5·5
115·12	− 3·66	5·0	...			„		3	19	32 + 48	38·6
115·18	+ 7·74	5·9	...			Camelop.		4	7	13 + 57	33·5
115·45	− 16·03	5·4	...		20	Persei		2	46	8 + 37	50·8
115·67	− 14·39	4·7	...		22 π	„		2	51	5 + 39	10·9
116·08	− 4·30	4·4	...		35 σ	„		3	22	7 + 47	34·8
116·40	+ 16·82	5·8	...			Camelop.		5	9	11 + 62	31·4

Galactic Long.	Lat.	Magn. H.P.	Magn. U.A.			Star.	α 1880. h	m	s	δ 1880. °	′	″
116°46	− 8°83	5·4	...	30		Persei	3	9	43	+43	35	0
116·58	−12·36	var. 2·3−3·5		26	β	„ , Algol	3	0	22	+40	29	5
116·60	+ 7·23	5·9	...			Camelop.	4	12	6	+56	12	9
116·63	+17·99	5·8	...	17		„	5	18	50	+62	57	9
116·70	−19·12	4·8	...	17		Persei	2	44	7	+34	33	9
116·71	−15·59	5·9	...			„	2	52	36	+37	39	2
116·74	− 0·36	5·7	...			„	3	39	28	+50	21	8
116·77	− 3·56	4·2	...	37	ψ	„	3	27	58	−47	47	5
117·13	+13·91	4·2	...	10		Camelop.	4	52	45	+60	15	9
117·20	−14·48	var. 3·4−4·2		25	ρ	Persei	2	57	29	+38	22	4
117·41	− 9·05	4·8	...	32	l	„	3	13	24	+42	53	7
117·47	− 5·70	5·4	...	36		„	3	24	8	+45	38	3
117·78	+ 0·43	5·5	...	43	A	„	3	47	41	+50	20	8
117·83	−13·20	4·7	...	28	ω	„	3	3	33	+39	9	3
117·87	− 3·23	3·2	...	39	δ	„	3	34	23	+47	24	1
117·87	−10·61	4·1	...	46	ξ	„	3	51	11	+35	26	7
118·05	−18·24	5·0	...	24		„	2	51	38	+34	42	1
118·12	+ 4·66	5·2	...	12	Hev.	Camelop.	4	7	22	+53	18	5
118·20	− 6·65	6·0	...			Persei	3	24	25	+44	26	7
118·53	+13·36	5·9	...	12		Camelop.	4	55	46	+58	51	1
118·56	+13·33	5·1	...	11		„	4	55	43	+58	48	2
118·85	+10·07	5·4	...	4		„	4	38	1	+56	32	5
119·22	+ 1·21	4·5	...	47	λ	Persei	3	57	39	+50	1	4
119·46	−21·24	5·2	...	21		„	2	50	1	+31	27	0
119·50	+ 6·48	5·5	... d	1		Camelop.	4	22	32	+53	38	9
119·53	− 1·80	5·4	...			Persei	3	47	20	+47	31	0
119·58	− 4·58	5·6	...			„	3	37	36	+45	18	2
120·39	+ 3·11	5·4	...			„	4	11	6	+50	37	6
120·59	− 4·68	5·9	...			„	3	41	43	+44	36	0
120·61	+ 2·44	4·6	...		h	„	4	9	13	+49	59	9
120·62	+ 7·06	5·5	...	2		Camelop.	4	30	28	+53	14	1
120·66	+ 9·89	5·8	...	5		„	4	45	15	+55	3	5
120·89	+ 2·38	5·6	...			Persei	4	10	13	+49	45	2
120·91	+ 6·79	5·4	...			Camelop.	4	30	28	+52	50	3
120·95	+ 2·72	7·2 var.?				Persei	4	11	56	+49	57	8
121·05	+19·13	5·2	...	31		Camelop.	5	44	13	+59	51	5
121·10	+14·41	5·3	...	16		„	5	13	11	+57	25	5
121·10	− 5·57	6·0	...			Persei	3	40	52	+43	35	5

Galactic Long.	Galactic Lat.	Magn. H.P.	Magn. U.A.	Star.	α 1880. h m s	δ 1880. ° ′ ″
121·23	− 0·51	4·3	...	48 *c* Persei	3 59 57·47	+23′4
121·29	−10·55	5·8	...	,,	3 25 41·39	29·6
121·40	− 7·10	4·0	...	41 *ν* ,,	3 37 3·42	11·9
121·52	+ 0·70	4·2	...	51 *μ* ,,	4 6 5·48	6·2
122·06	+21·54	5·5	...	40 Camelop.	6 4 54·60	1·8
122·07	+ 9·21	4·5	...	7 ,,	4 47 40·53	33·3
122·18	−16·90	4·8	...	23 Hev. Persei	3 11 14·33	46·9
122·66	+ 8·53	5·9	...	Camelop.	4 46 37·52	40·3
122·82	+20·46	5·3	...	37 ,,	5 59 24·58	56·9
123·25	+21·64	4·3	...	2 Lyncis	6 9 2·59	3·1
123·61	−16·78	5·6	...	Persei	3 17 0·33	6·5
123·61	+ 5·14	5·7	...	,,	4 34 15·49	44·5
123·66	+ 0·12	4·9	...	53 *d* ,,	4 12 53·46	12·6
123·73	−20·33	5·5	...	,,	3 8 2·30	6·5
123·84	−14·23	5·7	...	,,	3 25 2·35	3·1
123·91	−11·51	5·9	...	,,	3 33 20·37	11·5
123·99	+11·50	var.	6·5 − ?	R Aurigæ	5 7 38·53	26·9
124·03	+16·40	6·0	...	,, , 26 Camelop.	5 36 24·56	3·8
124·12	−16·09	5·5	...	Persei	3 20 49·33	23·4
124·66	+ 3·80	5·7	...	,,	4 32 27·48	3·9
124·67	+ 9·03	4·9	...	9 Aurigæ	4 57 17·51	26·2
124·83	+14·34	6·0	...	,,	5 26 44·54	20·8
124·89	− 7·56	3·0	...	45 *ε* Persei	3 49 48·39	39·7
124·98	+17·24	5·0	...	30 *ξ* Aurigæ	5 44 47·55	40·6
125·16	−11·97	5·6	...	Persei	3 36 46·36	4·8
125·38	+ 5·31	5·8	...	Aurigæ	4 42 8·48	31·9
126·42	−14·19	5·0	...	40 o Persei	3 34 46·33	34·7
126·63	+17·20	3·8	...	33 *δ* Aurigæ	5 49 39·54	16·4
127·00	− 5·03	4·9	...	52 *f* Persei	4 6 43·40	10·7
127·59	− 0·76	6·0	...	57 *m* ,,	4 24 58·42	48·3
127·72	−12·63	5·7	...	,,	3 44 14·33	59·7
127·79	− 7·64	5·7	...	50 ,,	4 0 37·37	43·4
127·83	−15·24	4·0	...	38 *o* ,,	3 36 48·31	54·4
127·96	−11·47	5·5	...	,,	3 48 45·34	43·7
128·18	−13·91	5·2	...	42 *n* ,,	3 41 58·32	43·3
128·53	+ 0·72	5·3	...	59 ,,	4 34 24·43	8·1
128·82	+ 6·79	5·6	...	Aurigæ	5 1 47·46	48·7
128·86	+19·83	5·5	...	45 ,,	6 12 1·53	30·6

Galactic Long.	Lat.	Magn. H.P.	Magn. U.A.		Star.	α 1880. h m s	δ ° ′
°	°	m	m				
129·32	− 1·54	4·4	...	58	*e* Persei	4 28 23	+41 1·0
129·40	+ 2·81	6·1	...		Aurigæ	4 46 15	+43 51·8
129·66	+ 13·24	5·4	...	27	*o* „	5 36 36	+49 46·3
129·75	− 14·20	3·1	...	44	ζ Persei	3 46 35	+31 31·6
130·21	+ 7·05	0·2	...	13	*a* Aurigæ, Capella	5 7 49	+45 52·4
130·30	+ 1·59	5·5	...		„	4 44 19	+42 22·9
130·33	+ 10·79	6·1	...		„	5 27 12	+47 38·0
130·39	+ 3·67	var.	3·0 − 4·5	7	ε „	4 53 22	+43 38·6
130·65	+ 15·18	6·0	...		„	5 50 3	+49 54·6
130·94	+ 15·67	6·0	...		„	5 53 29	+49 54·1
131·24	− 10·55	6·0	..		Persei	4 3 17	+33 16·3
131·96	− 8·48	5·1	...	54	„	4 12 37	+34 16·5
132·61	+ 2·04	4·0	...	8	ζ Aurigæ	4 54 5	+40 53·9
132·63	+ 14·47	5·5	...	36	„	5 51 52	+47 53·5
132·72	+ 16·41	5·6	... *d*	41	„	6 2 25	+48 44·0
132·87	− 8·19	5·6	...	55	Persei	4 16 42	+33 51·1
132·95	+ 2·73	3·3	..	10	*η* Aurigæ	4 58 6	+41 4·2
133·01	+ 5·41	6·0	..		„	5 9 42	+42 39·6
133·01	− 8·29	5·7	...	56	Persei	4 16 51	+33 40·9
133·13	+ 18·63	5·0	...	46	ψ Aurigæ	6 15 39	+49 20·8
133·31	− 21·08	4·4	..	19	*q* Tauri	3 38 4	+24 5·4
133·45	− 19·48	5·5	..		„	3 43 6	+25 12·9
133·49	− 21·06	4·0	...	20	„	3 38 41	+23 59·5
133·50	− 21·39	3·8	..	17	„	3 37 45	+23 44·1
133·85	− 2·12	5·2	...	1	Aurigæ	4 41 50	+37 16·5
133·87	− 14·45	5·2	...	42	ψ Tauri	3 59 35	+28 40·5
133·88	− 21·30	4·2	...	23	„	3 39 12	+23 34·4
133·98	− 21·02	3·0	...	25	*η* „	3 40 21	+23 44·0
134·19	+ 5·37	5·1	...	20	*ρ* Aurigæ	5 13 19	+41 41·0
134·33	− 20·79	3·8	...	27	Tauri	3 42 2	+23 41·1
134·33	+ 15·38	4·5	...	35	*π* Aurigæ	5 51 2	+45 55·4
134·62	+ 4·72	5·3	..		„	5 11 49	+40 57·6
134·71	− 0·43	5·1	...	4	„	4 51 7	+37 42·4
134·80	− 15·52	5·4	...	41	Tauri	3 59 15	+27 16·5
134·80	− 2·21	5·0	..	2	Aurigæ	4 44 36	+36 29·9
134·95	+ 5·09	5·5	...		„	5 14 25	+40 54·6
135·07	− 9·81	5·4	...		Persei	4 18 28	+31 10·0
135·10	− 21·91	5·3	..	57	Aurigæ	6 38 31	+48 54·8

Galactic Long.	Lat.	Magn. H.P.	Magn. U.A.		Star.		α 1880. h	m	s	δ 1880. °	′
		m	m								
135°19	+12°85	2·1	...	24	β	Aurigæ	5	50	44	+44	56·0
135·27	+ 3·97	5·0	...	15	λ	,,	3	10	42	+39	59·4
135·95	+ 2·13	4·9	...	11	μ	,,	5	5	13	+38	20·4
136·01	+18·38	6·0	...	47		,,	6	21	5	+46	45·6
136·32	−15·66	5·6	...	44	p	Tauri	4	3	31	+26	10·0
136·86	−20·74	5·7	...	32		,,	3	49	47	+22	7·9
136·97	−18·38	5·6	...	36		,,	3	57	11	+23	46·5
137·21	−13·53	5·1	...	52	ϕ	,,	4	12	58	+27	3·7
137·34	+12·46	6·2	...	38		Aurigæ	5	54	39	+42	54·8
137·52	− 5·37	6·0	...			,,	4	41	33	+32	22·5
138·11	− 3·77	2·7	...	3	ι	,,	4	49	11	+32	58·5
138·14	+ 3·28	5·2	...	21	σ	,,	5	16	30	+37	16·3
138·19	−10·14	5·6	...			Tauri	4	27	7	+28	42·5
138·39	− 6·13	5·7	...			Aurigæ	4	41	31	+31	13·6
138·53	−19·77	4·5	...	37	A	Tauri	3	57	36	+21	45·2
138·85	−14·36	5·5	...	59	χ	,,	4	15	17	+25	20·7
139·05	+19·64	5·2	...	55		Aurigæ	6	34	21	+44	38·3
139·28	+ 8·29	4·6	...	29	τ	,,	5	40	52	+39	8·3
139·47	− 9·26	5·9	...			Tauri	4	33	49	+28	22·8
139·47	+22·25	4·7	...			Aurigæ, 16 Lyncis	6	48	52	+45	15·0
139·54	+ 8·66	4·2	...	32	ν	,,	5	43	10	+39	6·7
139·65	+ 0·11	5·9	...			,,	5	8	23	+34	10·3
140·08	−15·03	6·2	...	62		Tauri	4	16	46	+24	1·2
140·25	+19·89	5·4	...	56		Aurigæ	6	38	5	+43	41·7
140·39	+ 0·53	5·1	...	19		,,	5	12	6	+33	49·9
140·43	+ 0·23	5·3	...			,,	5	11	6	+33	37·1
140·63	− 0·13	5·0	...	16		,,	5	10	18	+13	14·7
140·76	+18·22	5·2	...	50		,,	6	30	46	+42	35·6
140·85	− 1·00	5·2	... *d*	14		,,	5	7	36	+32	22·8
140·87	+ 2·12	5·3	...	24	ϕ	,,	5	19	42	+34	22·5
141·09	+ 7·63	5·2	...	31	v	,,	5	42	51	+37	16·2
141·20	−20·75	5·8	...	43		Tauri	4	2	11	+19	17·4
141·25	−17·83	5·4	...	51		,,	4	11	17	+21	17·1
141·30	−17·48	5·4	...	56		,,	4	12	30	+21	28·9
141·59	−15·64	4·6	...	69	v	,,	4	19	8	+22	32·4
141·61	−15·35	5·4	...	72		,,	4	20	7	+22	43·5
141·61	+10·87	5·3	...	40		Aurigæ	5	58	19	+38	29·5
141·63	− 7·79	5·9	...			Tauri	4	45	17	+27	41·7

Galactic Long.	Lat.	Magn. H.P.	Magn. U.A.		Star.		α 1880. h	m	s	δ 1880. °	′	″
141·76	−17·94	5·5	...	53		Tauri	4	12	22	+20	51	0
141·83	−18·70	4·6	...	50	ω	„	4	10	14	+20	16	9
141·84	−16·15	4·6	...	65	κ	„	4	18	13	+22	1	1
141·92	−16·21	5·5	...	67		„	4	18	16	+21	55	4
142·06	+ 9·06	2·7	...	37	θ	Aurigæ	5	51	32	+37	12	1
142·31	+19·91	5·0	...	58		„	6	42	17	+41	55	2
142·56	−17·34	5·9	...			Tauri	4	16	28	+20	42	1
142·60	+19·31	5·3	...	cum VIII. 71,		Aurigæ	6	39	54	+41	25	8
142·79	−16·14	5·7	...			Tauri	4	20	53	+21	21	0
143·20	+17·09	5·1	...	52		Aurigæ	6	30	28	+40	0	2
143·25	− 0·31	5·9	...			„	5	16	54	+31	1	8
143·36	+ 1·70	5·0	...	25	χ	„	5	24	55	+32	6	1
143·65	−13·12	4·4	...	94	τ	Tauri	4	35	3	+22	43	5
143·67	+16·85	5·7	...	51		Aurigæ	6	30	21	+39	29	7
143·80	−19·39	5·9	...			Tauri	4	13	27	+18	27	2
143·85	− 4·76	6·0	...			„	5	2	13	+27	52	6
144·10	− 1·83	5·6	...			Aurigæ	5	13	35	+29	26	6
144·32	− 0·41	5·8	...			„	5	19	28	+30	6	1
144·64	− 8·63	5·7	...	98	*k*	Tauri	4	50	49	+24	51	8
144·72	+ 0·59	var.	5−?			Aurigæ, Nova 1892	5	24	17	+30	31	2
144·80	−17·64	3·7	...	74	ε	Tauri	4	21	37	+18	54	8
145·15	−14 94	5·8	...			„	4	31	11	+20	26	5
145·17	−19·74	4·0	...	61	δ	„	4	16	1	+17	15	6
145·29	−19·03	4·2	...	68		„	4	18	33	+17	39	1
145·44	−19·59	4·7	...	64		„	4	17	11	+17	9	9
145·46	− 9·37	6·0	...	99		„	4	50	32	+23	45	6
145·48	+ 1·80	5·6	...	26		Aurigæ	5	30	56	+30	25	2
145·53	− 1·47	1·9	...	112	β	Tauri	5	18	42	+28	30	3
145·86	−20·15	5·6	...	63		„	4	16	32	+16	30	2
146·18	−21·57	3·9	...	54	γ	„	4	12	58	+15	20	2
146·31	+22·72	5·2	...	63		Aurigæ	7	3	24	+39	30	9
146 66	− 7·32	5·5	...	103		Tauri	5	0	48	+24	6	3
146·75	−21·77	5·1	...	58		„	4	13	48	+14	48	4
147·04	−19·51	5·3	...	75		„	4	21	35	+16	5	4
147·29	−20·38	4·6	...	71		„	4	19	30	+15	20	7
147·33	+ 9·08	6·1	...			Aurigæ	6	4	29	+32	43	1
147·38	−19·74	3·9	...	77	θ_1	Tauri	4	21	43	+15	41	6
147·47	−19·79	3·6	...	78	θ_2	„	4	21	49	+15	35	9

Galactic Long.	Galactic Lat.	Magn. H.P.	Magn. U.A.		Star.	α 1880. h	m	s	δ 1880. °	′	″
147	51 − 22	58	5·7	…	57 *h*	Tauri	4	13	12 + 13	44	7
147	52 − 19	23	4·9	…		,,	4	23	42 + 15	55	9
147	83 − 22	16	5·8	…	60	,,	4	15	18 + 13	47	5
147	90 − 19	66	5·6	…	80	,,	4	23	18 + 15	22	4
147	94 − 19	54	5·5	…	81	,,	4	23	48 + 15	25	8
148	08 − 20	90	4·9	…	73 π	,,	4	19	50 + 14	26	5
148	12 − 18	03	1·0	…	87 α	,,	4	29	2 + 16	16	0
148	12 − 9	85	4·7	…	102 ι	,,	4	55	55 + 21	25	0
148	62 − 13	71	5·1	5·6	97 *i*	,,	4	44	21 + 18	38	0
148	71 − 8	88	5·8	…	105	,,	5	0	45 + 21	32	7
148	75 − 2	90	5·4	…	118	,,	5	21	53 + 25	3	1
149	16 − 19	48	4·8	5·1	86 ρ	,,	4	27	2 + 14	35	4
149	14 − 17	78	4·8	…	92 σ_2	,,	4	32	25 + 15	40	7
149	22 − 17	88	5·1	…	91 σ_1	,,	4	32	18 + 15	33	7
149	45 − 0	52	4·9	…	125	,,	5	32	18 + 25	49	7
149	55 − 20	79	5·4	…	83	,,	4	23	52 + 13	28	0
149	57 + 12	71	6·0	…		Aurigæ	6	24	37 + 32	32	3
149	63 + 2	96	4·5	…	136	Tauri	5	45	47 + 27	34	9
149	68 + 23	77	5·3	…	65	Aurigæ	7	14	1 + 36	59	1
149	74 − 9	67	5·4	…	106 *l*	Tauri	5	0	42 + 20	15	5
149	82 − 21	56	5·2	5·5	79 *b*	,,	4	22	7 + 12	46	8
149	94 − 6	52	5·2	…	109 *n*	,,	5	12	4 + 21	58	4
150	07 + 17	19	3·7	…	34 θ	Geminorum	6	44	53 + 34	6	3
150	46 − 2	36	5·4	…	121	Tauri	5	28	7 + 23	57	5
150	47 + 8	09	4·5	…	44 κ	Aurigæ	6	7	44 + 29	32	4
150	72 + 19	94	5·7	…		,,	6	58	17 + 34	39	3
150	90 − 13	60	5·8	…		Tauri	4	50	26 + 16	57	8
150	96 + 11	07	5·2	…	48	Aurigæ	6	20	51 + 30	33	9
151	05 + 9	22	6·0	…		,,	6	13	32 + 29	35	6
151	07 + 16	04	5·7	…		Geminorum	6	41	52 + 32	44	5
151	13 − 10	80	5·1	…	104 *m*	Tauri	5	0	21 + 18	28	9
151	19 − 5	02	4·8	…	114 o	,,	5	20	26 + 21	50	0
151	28 − 19	99	6·1	…		Aurigæ	6	59	29 + 34	11	6
151	59 + 2	98	5·1	…	139	Tauri	5	50	33 + 25	56	2
151	70 + 0	52	5·1	…	132	,,	5	41	39 + 24	31	6
151	79 − 20	11	4·3	4·5	90 *c*	,,	4	31	27 + 12	16	1
152	15 − 1	31	6·0	…		,,	5	36	2 + 23	8	7
152	35 − 19	94	5·3	…	93	,,	4	33	23 + 11	57	6

Galactic Long.	Lat.	Magn. H.P.	Magn. U.A.		Star.		α 1880. h	m	s	δ 1880. °	′
152·57	−16·28	5·4	...	4	o_1	Orionis	4	45	45	+14	3·0
152·92	+ 1·88	6·0	...			Tauri	5	49	35	+24	13·8
153·33	+12·27	5·5	...	53		Aurigæ	6	30	46	+29	5·1
153·37	−22·04	4·6	4·6	88	d	Tauri	4	29	4	+ 9	54·9
153·41	−13·26	4·7	...	11		Orionis	4	57	43	+15	14·1
153·71	−19·08	5·6	...			,,	4	39	21	+11	29·1
153·77	−15·97	4·3	...	9	o_2	,,	4	49	37	+13	19·4
153·88	+11·21	4·9	...	49		Aurigæ	6	27	39	+28	6·9
153·89	−11·49	5·3	...			Orionis	5	4	48	+15	53·7
153·93	−19·73	5·3	5·9			,,	4	37	47	+10	55·3
153·98	−12·14	4·8	...	15		,,	5	2	50	+15	26·6
153·98	+13·51	5·4	...	28		Geminorum	6	37	9	+29	5·4
154·11	+12·18	5·7	...	54		Aurigæ	6	31	59	+28	22·0
154·19	+ 4·33	cum.	...	Mess. 35		Gemin.	$8^m·2$ 6	1	38	+24	26·6
154·43	− 7·36	5·4	...	115		Tauri	5	20	10	+17	51·5
154·54	− 8·23	5·2	...	111		,,	5	17	25	+17	16·2
154·58	− 6·01	4·6	...	119		,,	5	25	11	+18	30·2
154·62	+ 2·78	4·3	...	1		Geminorum	5	56	50	+23	16·1
154·80	− 5·78	5·3	...	120		Tauri	5	26	30	+18	27·2
155·21	+20·90	5·9	...			Geminorum	7	10	24	+31	10·1
155·29	−17·52	5·2	...	6	g	Orionis	4	48	8	+11	13·7
155·29	+19·25	4·6	...	46	τ	Geminorum	7	3	30	+30	26·4
155·33	+23·39	4·2	...	62	ρ	,,	7	21	23	+32	1·3
155·42	+17·38	6·0	...			,,	6	55	52	+29	32·6
155·67	+24·53	1·6	...d	66	α	,, , Castor	7	26	56	+32	9·0
155·87	− 6·86	5·5	...			Tauri	5	25	17	+16	58·1
156·00	− 0·70	4·6	...	54	χ_1	Orionis	5	47	17	+20	15·1
156·06	−18·98	6·0	6·3			,,	4	45	8	+ 9	46·2
156·10	− 1·32	6·1	...			,,	5	45	17	+19	50·1
156·26	− 8·41	5·5	...	116		Tauri	5	20	52	+15	46·3
156·26	− 0·47	var. 6·4−?			U	Orionis	5	48	42	+20	9·2
156·39	−18·24	4·8	5·0	7	π_1	,,	4	48	17	+ 9	57·5
156·51	− 0·87	5·8	...	57		,,	5	47	50	+19	43·5
156·52	− 5·90	5·4	...	122		Tauri	5	30	6	+16	57·9
156·53	+ 4·55	var. 3·2−4·2		7	η	Geminorum	6	7	38	+22	32·4
156·67	+24·31	5·4	...			,,	7	27	31	+31	13·2
156·81	−19·83	4·4	4·7	2	π_2	Orionis	4	44	4	+ 8	41·6
157·17	− 3·55	3·0	...	123	ζ	Tauri	5	30	28	+21	4·1

Galactic Long.	Galactic Lat.	Magn. H.P.	Magn. U.A.		Star.	α 1880. h m s	δ 1880. ° ′
°	°	m	m				
157·28	+ 1·13	4·8	...	62 χ_2	Orionis	5 56 48	+ 20 8·4
157·29	− 3·42	5·5	...	130	Tauri	5 40 26	+ 17 40·9
157·41	+ 11·62	3·2	...	27 ϵ	Geminorum	6 36 33	+ 25 14·9
157·46	+ 6·16	3·2	...	13 μ	,,	6 15 42	+ 22 34·4
157·50	− 5·33	4·9	...	126	Tauri	5 34 22	+ 16 28·2
157·61	+ 0·81	5·1	...	64	Orionis	5 56 21	+ 19 41·4
158·23	+ 2·47	5·4	5·9	21	,,	5 12 56	+ 2 28·2
158·37	− 21·12	3·3	3·2	1 π_3	,,	4 43 20	+ 6 45·0
158·41	− 8·03	5·7	...	35	,,	5 27 5	+ 14 13·2
158·42	− 19·63	5·6	6·0		,,	4 48 18	+ 7 35·0
158·47	− 13·30	5·6	5·9	18	,,	5 9 24	+ 11 12·3
158·55	+ 2·59	5·6	6·3	68	,,	6 4 55	+ 19 48·9
158·56	+ 17·89	5·5	...	47	Geminorum	7 3 56	+ 27 3·1
158·80	− 15·52	5·3	5·9	16 *h*	Orionis	5 2 44	+ 9 40·4
159·02	+ 21·23	4·0	...	60 ι	Geminorum	7 18 16	+ 28 2·1
159·04	+ 22·08	5·1	...	64	,,	7 21 52	+ 28 21·8
159·28	+ 22·10	5·1	...	65 *b*	,,	7 22 21	+ 28 9·7
159·43	+ 2·86	5·1	5·7	71	Orionis	6 7 47	+ 19 11·7
159·50	+ 25·22	4·1	...	75 σ	Geminorum	7 35 49	+ 29 10·3
159·73	− 16·56	5·4	5·9	14 *i*	Orionis	5 1 21	+ 8 20·4
159·78	− 21·61	4·0	3·7	3 π_4	,,	4 44 49	+ 5 23·9
160·01	− 5·22	5·7	...	131	Tauri	5 40 23	+ 14 26·5
160·16	+ 6·26	4·0	...	18 ν	Geminorum	6 21 50	+ 20 17·2
160·18	+ 14·97	5·3	...	42 ω	,,	6 55 6	+ 24 23·1
160·57	+ 25·34	1·1	...	78 β	,, , Pollux	7 38 58	+ 28 18·9
160·57	− 5·43	5·2	...	133	Tauri	5 40 55	+ 13 51·3
160·58	− 4·65	5·7	...	135	,,	5 43 39	+ 14 16·2
160·86	+ 22·96	4·2	...	69 v	Geminorum	7 28 32	+ 27 9·6
160·94	− 4·33	5·6	6·0	137	Tauri	5 45 33	+ 14 8·4
161·28	+ 17·00	5·8	...	48	Geminorum	7 5 9	+ 24 19·7
161·29	+ 11·64	5·2	...	36	,,	6 44 21	+ 21 54·1
161·50	+ 19·67	5·0	...	57 A	,,	7 16 9	+ 25 16·8
161·71	+ 0·75	5·0	5·5	69 f_1	Orionis	6 5 8	+ 16 9·4
161·76	− 13·75	5·8	6·1		,,	5 15 12	+ 8 18·5
161·87	− 5·71	4·8	5·4	134	Tauri	5 42 49	− 12 36·2
161·95	+ 14·88	5·8	...	44	Geminorum	6 58 5	+ 22 48·9
162·04	− 9·97	5·5	...		Orionis	5 28 36	+ 10 9·5
162·11	+ 1·45	5·4	5·9	72 f_2	,,	6 8 30	+ 16 10·7

Galactic Long.	Lat.	Magn. H.P.	Magn. U.A.		Star.	α 1880. h m s	δ 1880. °
162·11	+15·33	var.	6·6–?		R Geminorum	7 0 8	+22 52·9
162·30	−10·16	3·5	3·5 *d*	39	λ Orionis	5 28 32	+ 9 51·1
162·34	− 0·87	4·4	4·7	67	*ν* ,,	6 0 43	+14 46·9
162·63	−10·45	4·4	5·0	37	ϕ_1 ,,	5 28 14	+ 9 24·4
162·75	+24·24	5·3	...	76	*c* Geminorum	7 36 48	+26 4·1
162·93	− 3·69	5·7	6·2		Orionis	5 52 8	+12 47·7
162·95	−20·79	...	6·2 var.	23	,,	5 54 15	+ 3 26·2
163·08	−22·75	3·9	3·7	8	π_5 ,,	4 48 0	+ 2 14·6
163·08	−10·13	4·4	4·5	40	ϕ_2 ,,	5 30 19	+ 9 13·4
163·36	− 0·25	4·2	4·7	70	ξ ,,	6 5 7	+14 14·0
163·53	+18·80	6·1	...	58	Geminorum	7 16 15	+23 10·5
163·63	−16·99	5·9	6·1		Orionis	5 8 21	+ 5 0·9
163·73	+13·72	var.	3·7–4·5	43	ζ Geminorum	6 56 59	+20 44·7
163·77	− 4·79	6·1	6·5		Orionis	5 50 7	+11 30·2
163·79	− 0·64	5·7	...		,,	6 4 40	+13 39·8
163·96	+ 1·13	6·0	...		,,	6 11 16	+14 25·5
163·96	+ 7·82	5·0	5·7	26	Geminorum	6 35 25	+17 45·7
164·03	−14·16	1·9	1·7	24	γ Orionis	5 18 42	+ 6 14·4
164·05	+ 0·22	5·7	6·6		,,	6 8 16	+13 53·1
164·10	+17·69	3·6	...	55	δ Geminorum	7 12 57	+22 12·1
164·18	+23·78	3·6	...	77	κ ,,	7 37 12	+24 41·1
164·20	− 7·92	5·8	6·2		Orionis	5 40 17	+ 9 28·6
164·32	− 7·07	5·7	6·2		,,	5 43 26	+ 9 50·0
164·37	−22·24	4·7	4·7	10	,,	4 52 20	+ 1 31·7
164·47	− 3·32	5·9	6·5		,,	5 56 43	+11 40·9
164·53	+ 6·24	2·0	...	24	γ Geminorum	6 30 47	+16 30·0
164·74	−10·82	5·6	6·3		Orionis	5 31 31	+ 7 28·1
165·15	−13·19	4·3	4·8	32	A ,,	5 24 22	+ 5 51·3
165·25	− 0·29	5·4	...	73	,,	6 9 1	+12 35·2
165·41	+19·06	5·3	...	63	Geminorum	7 20 37	+21 41·3
165·45	−18·52	4·5	5·1	17	ρ Orionis	5 7 1	+ 2 43·0
165·46	− 5·91	6·1	6·4		,,	5 49 52	+ 9 29·4
165·58	− 0·28	5·1	...	74	*k* ,,	6 9 42	+12 18·2
165·76	+17·41	5·0	...	56	Geminorum	7 14 52	+20 40·1
166·01	+ 4·28	5·6	...		,,	6 26 47	+14 14·7
166·09	− 4·58	4·3	4·7	61	μ Orionis	5 55 47	+ 9 38·8
166·10	+ 8·70	5·4	...	33	Geminorum	6 42 55	+16 20·2
166·17	−16·14	5·0	5·2	23	*m* Orionis	5 16 32	+ 3 25·7

Galactic Long.	Lat.	Magn. H.P.	Magn. U.A.			Star.	α 1880. h m s	δ 1880. ° ′
166.46	+18.39	5·7	...	61		Geminorum	7 19 52	+20 29·7
166·87	−19·82	5·9	6·3			Orionis	5 5 34	+ 0 53·3
167·00	− 9·28	5·3	5·9	52		,,	5 41 33	+ 6 24·6
167·10	− 7·27	var.	1·0−1·4?	58	α	,,	5 48 41	+ 7 23·0
167·12	−15·53	4·7	5·0	30	ψ	,,	5 20 33	+ 2 59·4
167·40	+10·85	5·9	...	41		Geminorum	6 53 22	+16 14·6
167·45	+ 0·94	cum.				Monocer.	$7^{m}\cdot5$ 6 17 53	+11 19·1
167·73	+ 1·15						8 6 19 12	+11 11·5
167·54	−14·49	5·5	6·0	33	n_1	Orionis	5 24 57	+ 3 12·0
167·65	−13·71	5·3	5·8	38	n_2	,,	5 27 58	+ 3 41·0
167·68	− 1·31	5·2	5·9	75	l	,,	6 10 30	+ 9 59·1
167·87	−12·37	4·5	5·0	47	ω	,,	5 32 51	+ 4 3·1
167·94	−16·63	4·6	5·4	25		,,	5 18 31	+ 1 44·1
168·05	+ 6·04	4·6	5·2	30		Geminorum	6 37 13	+13 20·8
168·08	+ 2·62	4·9	...			Monocer.	6 25 7	+11 37·6
168·30	+10 94	5·9	...			Geminorum	6 55 26	+15 30·4
168·45	+ 6·07	3·4	...	31	ξ	,,	6 38 33	+13 1·4
168·45	+12·52	5·6	...	45		,,	7 1 29	+16 7·2
168·70	−15·56	5·6	6·4			Orionis	5 23 41	+ 1 41·6
168·80	+13·69	5·4	...	51		Geminorum	7 6 29	+16 21·7
168·99	+14·87	3·6	...	54	λ	,,	7 11 12	+16 45·3
169·05	− 9·85	6·0	6·5			Orionis	5 43 52	+ 4 23·2
169·34	+ 8·29	4·8	... *d*	38	*e*	Geminorum	6 47 52	+13 19·7
169·43	− 0·35	6·0	6 6			Monocer.	6 17 28	+ 8 57·7
169·56	−18·44	4·6	5·1	22	o	Orionis	5 15 38	− 0 30·1
169·59	−20·33	6·0	6·5			,,	5 9 14	− 1 32·9
169·60	−17·89	...	6·2			,,	5 17 34	− 0 16·4
169·99	+18·05	5·6	...			Geminorum	7 24 53	+17 20·4
170·04	−21·75	6·0	6·3			Orionis	5 5 17	− 2 38·4
170·08	− 6·18	5·7	6·3	63		,,	5 58 34	+ 5 25·5
170·19	+21·74	5·1	...	81	*g*	Geminorum	7 39 11	+18 48·1
170·28	+19·96	5·2	...	74	*f*	,,	7 32 33	+17 56·8
170·34	−18·10	5·2	5·6	27	*p*	Orionis	5 18 23	− 1 0·5
170·55	+ 3·64	var.	4·9−5·4	15	S	Monocer.	6 34 22	+10 0·3
170·03	−13·02	5·3	5·3	51	*b*	Orionis	5 36 16	+ 1 24·9
170·83	−16·18	var.	2·2−2·7	34	δ	,,	5 25 53	− 0 23·4
171·15	− 0·97	var.	5·8−8·2		T	Monocer.	6 18 44	+ 7 9·0
171·17	− 6·82	5·7	6·2	66		Orionis	5 58 38	+ 4 9·8

Galactic Long.	Lat.	Magn. H.P.	Magn. U.A.		Star.	α 1880. h	m	s	δ 1880. °	′
171·24	−17·07	var.	4·7−6	31	Orionis	5	23	38	− 1	11·3
171·38	+17·89	5·0	...	68	Geminorum	7	26	46	+16	5·0
171·59	−10·68	5·0	5·5	56	Orionis	5	46	13	+ 1	49·5
171·73	−18·86	3·5	3·4	28 η	,,	5	18	27	− 2	30·5
171·80	−16·29	...	6·1		,,	5	27	26	− 1	14·5
171·88	+ 0·79	4·3	5·0	13	Monocer.	6	26	25	+ 7	25·2
171·90	− 3·69	...	6·2 var.		Orionis	6	10	55	+ 5	8·1
171·99	−23·80	2·9	2·8	67 β	Eridani	5	1	57	− 5	14·6
172·08	−16·69	5·2	6·1		Orionis	5	26	37	− 1	40·8
172·20	−15·73	1·8	1·8	46 ε	,,	5	30	7	− 1	16·8
172·36	− 9·41	6·1	6·1	59	,,	5	52	10	+ 1	49·4
172·39	+ 9·17	5·2	...		Geminorum	6	56	59	+11	7·6
172·42	+ 7·14	5·7	...		Monocer.	6	49	50	+10	6·6
172·44	+ 4·34	5·6	6·5	16	,,	6	40	0	+ 8	42·8
172·73	−14·69	5·1	5·7		Orionis	5	34	45	− 1	11·6
173·02	+ 4·25	5·0	5·3	17	Monocer.	6	40	49	+ 8	9·9
173·12	− 6·79	5·5	5·8		Orionis	6	2	42	+ 2	31·0
173·17	− 2·50	4·4	4·8 *d*	8	Monocer.	6	17	25	+ 4	39·1
173·33	−18·32	6·0	6·5		Orionis	5	23	25	− 3	32·6
173·38	+ 5·60	5·7	6·3		Monocer.	6	46	18	+ 8	31·5
173·45	−15·12	1·9	1·8 *d*	50 ζ	Orionis	5	34	42	− 2	0·5
173·47	+ 1·17	6·0	6·7		Monocer.	6	30	58	+ 6	14·1
173·52	− 9·99	5·2	5·7	60	Orionis	5	52	39	+ 0	32·4
173·78	−15·88	3·7	4·0	48 σ	,,	5	32	43	− 2	40·2
173·84	− 0·61	...	cum.		Monocer.	7m	6	25	33	+ 5	1·6
173·87	−18·99	5·9	...		Geminorum	7	35	17	+14	29·2
173·96	+ 8·24	6·0	6·4		Monocer.	6	56	44	+ 9	18·7
173·97	− 0·56	5·7	6·3 cum.	12	,,	6	25	57	+ 4	56·4
174·20	+ 8·78	...	6·1		,,	6	59	5	+ 9	21·9
174·25	+14·13	5·4	5·8	1	Canis min.	7	18	18	+11	54·2
174·50	+15·33	5·0	5·0	6	,, ,,	7	23	7	+12	14·9
174·75	−16·19	6·0	6·7		Orionis	5	33	32	− 3	38·0
174·96	−22·55	3·6	3·9	20 τ	,,	5	11	47	− 6	58·5
175·05	− 2·60	5·8	6·2		Monocer.	6	21	4	+ 2	58·7
175·39	−17·71	4·6 / 5·0	5·5 / 6·1	42 *c*	Orionis	5	29	28	− 4	55·1
175·69	−25·31	4·4	4·6	69 λ	Eridani	5	3	24	− 8	54·6
175·85	−23·87	0·3	1·0	19 β	Orionis, Rigel	5	8	46	− 8	20·5

Galactic Long.	Galactic Lat.	Magn. H.P.	Magn. U.A.		Star.	α 1880. h	m	s	δ 1880. °	′
175·88	−18·01	4·4	5·0	41	θ_1 Orionis	5	29	23 −	5	28·2
...	...	4·9	5·2	43	θ_2 „	5	29	29 −	5	29·8
175·98	+ 8·42	6·0	6·1		Monocer.	7	1	20 +	7	39·5
176·38	−18·22	3·0	2·9	44	ι Orionis	5	29	34 −	5	59·4
176·38	−14·48	5·7	6·5		„	5	42	37 −	4	7·8
176·41	−18·35	4·5	5·5 var.		„	5	29	11 −	6	5·0
176·50	+13·16	5·0	5·6	2	ϵ Canis min.	7	19	5 +	9	30·7
176·57	− 6·84	5·6	6·1		Orionis	6	9	28 −	0	28·1
176·68	−21·63	4·3	4·4	29	*e* „	5	18	10 −	7	55·2
176·91	−11·48	4·7	5·2		„	5	54	3 −	3	4·8
177·12	+13·54	4·6	5·1	4	γ Canis min.	7	21	38 +	9	10·0
177·18	−22·06	5·8	6·6		Orionis	5	17	33 −	8	31·8
177·22	−19·66	4·7	5·1	36	*v* „	5	26	8 −	7	23·5
177·31	− 3·91	5·2	5·9	77	„ , Monoc.	6	21	4 +	0	22·2
177·52	+23·36	5·1	5·4	8	Cancri	7	58	23 +	13	27·5
177·60	+18·35	5·5	5·6	11	Canis min.	7	39	40 +	11	3·6
177·68	+13·03	3·1	3·0	3	β „ „	7	20	39 +	8	31·8
177·72	−13·23	5·9	6·0		Orionis	5	49	34 −	4	38·3
177·82	− 4·19	...	6·1	78	„ , Monoc.	6	21	8 −	0	12·3
178·01	−18·10	5·0	5·2	49	*d* „	5	33	5 −	7	16·9
178·02	+ 1·65	4·8	5·2	18	Monocer.	6	41	36 +	2	32·5
178·08	+ 8·42	6·0	6·3		Canis min.	7	5	27 +	5	51·1
178·13	−17·03	6·0	6·4		Orionis	5	37	4 −	6	51·4
178·15	− 4·95	5·8	6·3		„ , Monoc.	6	19	8 −	0	52·4
178·16	+ 7·03	5·7	6·5		Monoc., Can. min.	7	0	44 +	5	5·7
178·72	−10·60	5·2	5·9		Orionis, Monoc.	6	0	42 −	4	11·0
178·84	− 0·80	5·7	6·3		Monocer.	6	34	55 +	0	36·3
178·90	+12·57	5·3	5·9	5	η Canis min.	7	21	35 +	7	11·1
178·94	− 6·12	var.	6·9 − ?		V Monocer.	6	16	41 −	2	8·2
179·16	− 3·69	5·0	5·7		„	6	27	32 −	1	7·8
179·26	− 7·08	5·1	5·5		„ , Orionis	6	13	59 −	2	53·7
179·83	−15·53	5·3	5·9	55	Orionis	5	45	34 −	7	33·1
180·03	− 9·04	5·6	6·2		Monocer.	6	8	41 −	4	32·1

The second half of the list will be given in one of the next numbers of the *Monthly Notices*.

Colonel Cooper's Observatory:
Markree, Collooney, Ireland.

CONTENTS.

	PAGE
Fellows elected	53
Candidates proposed	*ib.*
Presents announced	54
W. H. M. Christie, Note on Nova *Aurigæ*	*ib.*
Eugen von Gothard, On the spectrum of the new star in *Auriga*, as compared with the spectra of planetary nebulæ	55
S. W. Burnham, The new star in *Auriga*	58
S. W. Burnham, The binary star Σ 1785	60
G. J. Newbegin, The lunar eclipse, 1892 May 11–12	64
A. M. W. Downing, Note on an occultation of DM. + 4°.123 (Mag. 6·5) by Mars on 1893 January 14	*ib.*
Isaac Roberts, Photographs of Comet Holmes	65
Edward Roberts, Elements of Comet Holmes (*f* 1892)	66
Royal Observatory, Greenwich, Observations of Holmes' Comet (*f* 1892)	67
John Tebbutt, Observations of Winnecke's periodical Comet at Windsor, New South Wales	70
A. Marth, Galactic longitudes and latitudes of the brighter stars in a zone of the heavens containing the Milky Way	74

Printed by SPOTTISWOODE & Co., New-street Square, London; and Published at the Apartments of the Society, January 1893.

UNIVERSITY OF LONDON
– 6 NOV 1952
LIBRARY